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SEQUENCE LISTING

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LARSEN, Jorgen N.
SPANGFORT, Michael D.

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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
50 55 60

Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
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 35 40 45

Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
 50 55 60

Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
 65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Gly Asp Gly Gly Ser
 100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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 35 40 45

Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
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Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Ser Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly Ser
 100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
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Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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 Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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 Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
 65 70 75 80

 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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 Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
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 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
 65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Ser Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
 100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
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 35 40 45

Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
 50 55 60

Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
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Tyr	Asn	Tyr	Ser	Val	Ile	Glu	Gly	Gly	Pro	Ile	Gly	Asp	Thr	Leu	Glu
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35 40 45

Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
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Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
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Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
85 90 95

Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
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 35 40 45

Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
 50 55 60

Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
 65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
 85 90 95

Ser Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
 100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
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35 40 45

Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
50 55 60

Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
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Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
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Ser Ile Ser Asn Glu Ile Val Ile Val Ala Thr Gly Asp Gly Gly Ser
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Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
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gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat 192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
50 55 60

tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca gaa ggt att 240
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile

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Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr	85	90	95	
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Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly	100	105	110	
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Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg	115	120	125	
gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc				432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile	130	135	140	
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Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln	145	150	155	160
gaa gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt				528
Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly	165	170	175	
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Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp	180	185	190	
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc				624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile	195	200	205	
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Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu	210	215	220	
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Arg Gln Met Arg Thr Val Thr Thr Ile Arg Met Gln Gly Gly Cys Gly				
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu				
35	40	45		

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
50 55 60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile
65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
85 90 95

Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
145 150 155 160

Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
195 200 205

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1				5				10						15		

cga	caa	atg	cga	act	gtc	act	acc	att	cgt	atg	caa	gga	ggc	tgt	ggc	96
Arg	Gln	Met	Arg	Thr	Val	Thr	Thr	Ile	Arg	Met	Gln	Gly	Gly	Cys	Gly	
			20					25					30			

tca	tgt	tgg	gct	ttc	tct	ggc	gtt	gcc	gca	act	gaa	tca	gct	tat	ttg	144
Ser	Cys	Trp	Ala	Phe	Ser	Gly	Val	Ala	Ala	Thr	Glu	Ser	Ala	Tyr	Leu	
		35					40						45			

gct	gtg	cgt	aat	caa	tca	ttg	gat	ctt	gct	gaa	caa	gaa	tta	gtc	gat	192
Ala	Val	Arg	Asn	Gln	Ser	Leu	Asp	Leu	Ala	Glu	Gln	Glu	Leu	Val	Asp	
	50					55						60				

tgt	gct	tcc	caa	cac	ggc	tgt	cat	ggc	gat	acc	att	cca	cag	ggc	att	240
Cys	Ala	Ser	Gln	His	Gly	Cys	His	Gly	Asp	Thr	Ile	Pro	Gln	Gly	Ile	
65					70				75					80		

gaa	tac	atc	caa	cat	aat	ggc	gtc	gtc	caa	gaa	agc	tac	tat	cga	tac	288
Glu	Tyr	Ile	Gln	His	Asn	Gly	Val	Val	Gln	Glu	Ser	Tyr	Tyr	Arg	Tyr	
			85					90						95		

gtt gca gaa gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt	336
Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly	
100 105 110	
atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt	384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg	
115 120 125	
gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc	432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile	
130 135 140	
aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa	480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln	
145 150 155 160	
cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt	528
Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly	
165 170 175	
tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg	576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp	
180 185 190	
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc	624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile	
195 200 205	
gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc	666
Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu	
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu	
35 40 45	
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp	
50 55 60	

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile
65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
85 90 95

Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln
145 150 155 160

Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
195 200 205

Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
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cga caa atg gaa act gtc act ccc att cgt atg caa gga ggc tgt ggt		96
Arg Gln Met Glu Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly		
20 25 30		
tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg		144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu		
35 40 45		
gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat		192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp		
50 55 60		
tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca cag ggt att		240
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile		
65 70 75 80		
gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac		288
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr		
85 90 95		
gtt gca cag gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt		336
Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly		
100 105 110		

atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt 384
 Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
 115 120 125

 gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc 432
 Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140

 aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa 480
 Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln
 145 150 155 160

 cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt 528
 Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
 165 170 175

 tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg 576
 Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
 180 185 190

 gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc 624
 Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
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 gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc 666
 Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
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 35 40 45

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile
 65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr

85	90	95
Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly		
100	105	110
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg		
115	120	125
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile		
130	135	140
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln		
145	150	155
Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly		
165	170	175
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp		
180	185	190
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile		
195	200	205
Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu		
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 Arg Gln Met Gln Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
 20 25 30

tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg 144
 Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
 35 40 45

gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat 192
 Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca gaa ggt att 240
 Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile
 65 70 75 80

gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac 288
 Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95

gtt gca gaa gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt 336
 Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
 100 105 110

atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt 384
 Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
 115 120 125

gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc 432

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140

aaa gat tta gac gca ttc cgt cat tat gat ggc cag aca atc att caa 480
 Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
 145 150 155 160

cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt 528
 Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
 165 170 175

tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg 576
 Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
 180 185 190

gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc 624
 Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
 195 200 205

gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc 666
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 35 40 45

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile
 65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95

Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
 100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
145 150 155 160

Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
195 200 205

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cga caa atg cga act gtc act acc att cgt atg caa gga ggc tgt ggt	96
Arg Gln Met Arg Thr Val Thr Thr Ile Arg Met Gln Gly Gly Cys Gly	
20 25 30	
tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg	144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu	
35 40 45	
gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat	192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp	
50 55 60	
tgt gct aac caa cac ggt tgt cat ggt gat acc att cca cgt ggt att	240
Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile	
65 70 75 80	
gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac	288
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr	
85 90 95	
gtt gca gaa gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt	336
Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly	
100 105 110	
atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt	384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg	
115 120 125	
gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc	432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile	
130 135 140	
aaa gat tta gac gca ttc cgt cat tat gat ggc cag aca atc att caa	480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln	

145	150	155	160	
cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt				528
Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly				
	165	170	175	
tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg				576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp				
	180	185	190	
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc				624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile				
	195	200	205	
gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc				666
Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu				
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu				
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Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp				
	50	55	60	
Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile				
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Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr				
	85	90	95	
Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly				
	100	105	110	
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg				
	115	120	125	

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
 145 150 155 160

Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
 165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
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 cga caa atg gaa act gtc act ccc att cgt atg caa gga ggc tgt ggt 96
 Arg Gln Met Glu Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
 20 25 30
 tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg 144
 Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
 35 40 45
 gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat 192
 Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60
 tgt gct aac caa cac ggt tgt cat ggt gat acc att cca cgt ggt att 240
 Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
 65 70 75 80
 gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac 288
 Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95
 gtt gca gaa gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt 336
 Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
 100 105 110
 atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt 384
 Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
 115 120 125
 gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc 432
 Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140
 aaa gat tta gac gca ttc cgt cat tat gat ggc cag aca atc att caa 480
 Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
 145 150 155 160
 gaa gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt 528
 Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
 165 170 175

tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg 576
 Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
 180 185 190

gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc 624
 Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
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 35 40 45

Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
 65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95

Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
 100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
 115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
 145 150 155 160

Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
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Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
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Arg Gln Met Gln Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
          20          25          30

tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg      144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
          35          40          45

gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat      192
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
          50          55          60

tgt gct aac caa cac ggt tgt cat ggt gat acc att cca cgt ggt att      240
Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
65          70          75          80

gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac      288
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
          85          90          95

gtt gca cag gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt      336
Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
          100          105          110

atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt      384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
          115          120          125

gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc      432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
          130          135          140

aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa      480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln
145          150          155          160

gaa gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt      528
Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
          165          170          175

tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg      576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
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Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

Cys Ala Asn Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
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Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
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Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
 100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
 115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln
 145 150 155 160

Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly

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Tyr	Ser	Asn	Ala	Gln	Gly	Val	Asp	Tyr	Trp	Ile	Val	Arg	Asn	Ser	Trp
			180					185					190		
Asp	Thr	Asn	Trp	Gly	Asp	Asn	Gly	Tyr	Gly	Tyr	Phe	Ala	Ala	Asn	Ile
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 Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
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 Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60
 tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca gaa ggt att 240
 Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile
 65 70 75 80
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 Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95
 gtt gca cag gaa caa tca tgc cga cga cca aat gca gat cgt ttc ggt 336
 Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly
 100 105 110
 atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att gaa 384
 Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Glu
 115 120 125
 gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc 432
 Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140
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145	150	155	160	
gaa gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt				528
Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly				
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tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg				576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp				
	180	185	190	
gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc				624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile				
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu			
	35	40	45
Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp			
	50	55	60
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Glu Gly Ile			
65	70	75	80
Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr			
	85	90	95
Val Ala Gln Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly			
	100	105	110
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Glu			
	115	120	125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
 145 150 155 160

Glu Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly
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Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
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 Arg Gln Met Arg Thr Val Thr Thr Ile Arg Met Gln Gly Gly Cys Gly
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 Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
 35 40 45
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 Ala Val Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60
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 Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile
 65 70 75 80
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 Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95
 gtt gca gaa gaa caa tca tgc cga cga cca aat gca gat cgt ttc ggt 336
 Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly
 100 105 110

atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cag	384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Gln	
115 120 125	
gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc	432
Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile	
130 135 140	
aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa	480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln	
145 150 155 160	
cag gat aat ggt tac caa acc aac tat cac gct gtc aac att gtt ggt	528
Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly	
165 170 175	
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Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp	
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gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc	624
Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile	
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Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly		
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Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln		
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Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp		
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cga caa atg cga act gtc act acc att cgt atg caa gga ggc tgt ggt      96
Arg Gln Met Arg Thr Val Thr Thr Ile Arg Met Gln Gly Gly Cys Gly
          20          25          30

tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg      144
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
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gct gtg cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat      192

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 Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Gln Thr Ile Ile Gln
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Arg Gln Met Arg Thr Val Thr Thr Ile Arg Met Gln Gly Gly Cys Gly	
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Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu	
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Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Gln Gly Ile	
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Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr	
85 90 95	
gtt gca gaa gaa caa tca tgc cga cga cca aat gca gat cgt ttc ggt	336
Val Ala Glu Glu Gln Ser Cys Arg Arg Pro Asn Ala Asp Arg Phe Gly	
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atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cag	384
Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Gln	
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Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile	
130 135 140	
aaa gat tta gac gca ttc cgt cat tat gat ggc gaa aca atc att caa	480
Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Glu Thr Ile Ile Gln	
145 150 155 160	
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Gln Asp Asn Gly Tyr Gln Thr Asn Tyr His Ala Val Asn Ile Val Gly	
165 170 175	
tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt ttt	576
Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Phe	
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Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile	
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Cys	Ala	Ser	Gln	His	Gly	Cys	His	Gly	Asp	Thr	Ile	Pro	Gln	Gly	Ile
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Glu	Tyr	Ile	Gln	His	Asn	Gly	Val	Val	Gln	Glu	Ser	Tyr	Tyr	Arg	Tyr
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Val	Ala	Glu	Glu	Gln	Ser	Cys	Arg	Arg	Pro	Asn	Ala	Asp	Arg	Phe	Gly
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Ile	Ser	Asn	Tyr	Cys	Gln	Ile	Tyr	Pro	Pro	Asn	Val	Asn	Lys	Ile	Gln
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Lys	Asp	Leu	Asp	Ala	Phe	Arg	His	Tyr	Asp	Gly	Glu	Thr	Ile	Ile	Gln
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Gln	Asp	Asn	Gly	Tyr	Gln	Thr	Asn	Tyr	His	Ala	Val	Asn	Ile	Val	Gly
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Tyr	Ser	Asn	Ala	Gln	Gly	Val	Asp	Tyr	Trp	Ile	Val	Arg	Asn	Ser	Phe
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Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly
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Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat 192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
50 55 60

gtt ccc ggt atc gat cca aat gca tgc cat tat atg aac tgt cca ttg 240
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
65 70 75 80

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa 288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt 336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cgc 384
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35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
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 Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
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 Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
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 Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
 65 70 75 80
 gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa 288
 Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95
 att gca cca aaa tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt 336
 Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110
 gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag 384
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Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
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Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
 65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
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Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly		
20 25 30		
aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg		144
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala		
35 40 45		
aca gct aaa att gaa atc aaa gct tca atc gat ggt tta gaa gtt gat		192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp		
50 55 60		
gtt ccc ggt atc gat cca aat gca tgc cat tat atg aac tgt cca ttg		240
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu		
65 70 75 80		
gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa		288

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95
 att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt 336
 Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110
 gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag 384
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 50 55 60
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35 40 45	
aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat	192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp	
50 55 60	
gtt ccc ggt atc gat cca aat gca tgc cat tat atg aac tgt cca ttg	240
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu	
65 70 75 80	
gtt aac gga caa caa tat gat att aaa tat'aca tgg aat gtt cca aaa	288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys	
85 90 95	
att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt	336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly	
100 105 110	
gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag	384
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Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
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Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu

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          20          25          30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg      144
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          50          55          60

gtt ccc ggt atc gat cca aat gca tgc cat tat atg aac tgt cca ttg      240
Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
65          70          75          80

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa      288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
          85          90          95

att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt      336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
          100          105          110

gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag      384
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Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
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Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
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 Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile Gly Arg Gly
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 Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
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aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat 192
 Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
 50 55 60

gtt ccc ggt atc gat cca aat gca tgc cat tat atg aac tgt cca ttg 240
 Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
 65 70 75 80

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa 288
 Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt 336
 Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110

gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag 384
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 35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
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Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Asn Cys Pro Leu
 65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
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 Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
 1 5 10 15
 ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att cat agc ggt 96
 Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
 20 25 30
 aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
 Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala

35	40	45	
aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat			192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp			
50	55	60	
ggt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg			240
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu			
65	70	75	80
ggt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa			288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys			
	85	90	95
att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt			336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly			
	100	105	110
gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cgc			384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg			
	115	120	125
gat			387
Asp			

<210> 48
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 <212> PRT
 <213> Dermatophagoides pteronyssinus

<400> 48

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val			
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Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly			
	20	25	30
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala			
	35	40	45
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp			
	50	55	60
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu			
	65	70	75
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys			
	85	90	95

Ile	Ala	Pro	Asn	Ser	Glu	Asn	Val	Val	Val	Thr	Val	Lys	Val	Leu	Gly
			100					105					110		

Asp	Asn	Gly	Val	Leu	Ala	Cys	Ala	Ile	Ala	Thr	His	Ala	Lys	Ile	Arg
	115						120					125			

Asp

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 gat caa gtc gat gtc aaa gat tgt gcc aat cat gaa atc aaa gaa gtt 48
 Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
 1 5 10 15
 ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att cat agc ggt 96
 Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
 20 25 30
 aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
 Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
 35 40 45
 aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat 192
 Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
 50 55 60
 gtt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg 240
 Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
 65 70 75 80
 gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa 288
 Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95
 att gca cca aaa tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt 336
 Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110
 gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag 384
 Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
 115 120 125
 gat 387
 Asp

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 <213> Dermatophagoides pteronyssinus

<400> 50
 Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
 1 5 10 15
 Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
 20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
 35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
 50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
 65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
 100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
 115 120 125

Asp

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Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
1          5          10          15

ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att cat agc ggt      96
Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
          20          25          30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg      144
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
          35          40          45

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta gaa gtt gat      192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
          50          55          60

gtt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg      240
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65          70          75          80

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa      288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
          85          90          95

att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt      336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
          100          105          110

gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag      384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
          115          120          125

gat
387

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Asp

<210> 52
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<213> Dermatophagoides pteronyssinus

<400> 52

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
1 5 10 15

Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

Asp

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 Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
 1 5 10 15
 ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att cat agc ggt 96
 Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
 20 25 30
 aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
 Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
 35 40 45
 aca gct aaa att gaa atc aaa gct tca atc gat ggt tta gaa gtt gat 192
 Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
 50 55 60

Asp

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<400> 55
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Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
1 5 10 15

ttg gta cca gga tgc cat ggt tca gaa cca tgt atc att cat agc ggt 96
Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Ser Gly
20 25 30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg 144
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat 192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
50 55 60

gtt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg 240
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65 70 75 80

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa 288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt 336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag 384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

gat 387
Asp

<210> 56
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<212> PRT
<213> Dermatophagoides pteronyssinus

<400> 56
Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Glu Val
1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Ser Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115 120 125

Asp

<210> 57
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Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1          5          10          15

ttg gta cca gga tgc cat ggt aac gaa cca tgt atc att cat agc ggt      96
Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
          20          25          30

aaa cca ttc caa ttg gaa gct tta ttc gaa gcc aat caa aac tca gcg      144
Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
          35          40          45

aca gct aaa att gaa atc aaa gct tca atc gat ggt tta agc gtt gat      192
Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
          50          55          60

gtt ccc ggt atc gat cca aat gca tgc aac tat atg aaa tgt cca ttg      240
Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65          70          75          80

gtt aac gga caa caa tat gat att aaa tat aca tgg aat gtt cca aaa      288
Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
          85          90          95

att gca cca aac tct gaa aat gtt gtc gtc act gtt aaa gtt ttg ggt      336
Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
          100          105          110

gat aat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cag      384
Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
          115          120          125

gat
Asp      387

<210> 58
<211> 129

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<212>  PRT
<213>  Dermatophagoides pteronyssinus

<400>  58

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1          5          10          15

Leu Val Pro Gly Cys His Gly Asn Glu Pro Cys Ile Ile His Ser Gly
20          25          30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Ala
35          40          45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Ser Val Asp
50          55          60

Val Pro Gly Ile Asp Pro Asn Ala Cys Asn Tyr Met Lys Cys Pro Leu
65          70          75          80

Val Asn Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85          90          95

Ile Ala Pro Asn Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100         105         110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Gln
115         120         125

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Asp

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<212>  DNA
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gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc      48
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1          5          10          15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt      96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
          20          25          30

aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc      144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
          35          40          45

ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag      192
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
          50          55          60

tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc      240
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65          70          75          80

gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc      288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
          85          90          95

aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac      336
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
          100          105          110

aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc      384
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
          115          120          125

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gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc 432
 Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc 480
 His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc 528
 Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag 576
 Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
 180 185 190

gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag 624
 Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

agc tac aag ttc atc ccc gcc ctg gag gcc gcc gtc aag aaa gcc tac 672
 Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
 210 215 220

gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag 720
 Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct 768
 Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc 816
 Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc 861
 Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 60
 <211> 287
 <212> PRT
 <213> Phleum pratense

<400> 60

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly

35	40	45
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys		
50	55	60
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe		
65	70	75 80
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser		
	85	90 95
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr		
	100	105 110
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val		
	115	120 125
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val		
	130	135 140
His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly		
145	150	155 160
Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala		
	165	170 175
Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu		
	180	185 190
Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu		
	195	200 205
Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr		
	210	215 220
Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu		
225	230	235 240
Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala		
	245	250 255
Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Val Gly		
	260	265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

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 Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15
 tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt 96
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30
 aag gcg acg acc gag gag cag aag ctg atc gag aag atc aac gcc ggc 144
 Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly

35	40	45	
ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys 50 55 60			192
tac aac acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe 65 70 75 80			240
gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser 85 90 95			288
aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr 100 105 110			336
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val 115 120 125			384
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val 130 135 140			432
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly 145 150 155 160			480
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala 165 170 175			528
acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu 180 185 190			576
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu 195 200 205			624
agc tac aag ttc atc ccc gcc ctg gag gcc gcc gtc aag aaa gcc tac Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr 210 215 220			672
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu 225 230 235 240			720
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala 245 250 255			768
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Val Gly 260 265 270			816

gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc
 Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

861

<210> 62
 <211> 287
 <212> PRT
 <213> Phleum pratense
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Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

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 Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15
 tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt 96
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30
 aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc 144
 Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45
 ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag 192
 Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60
 tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc 240
 Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80
 gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc 288
 Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95
 aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac 336
 Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110
 aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc 384
 Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125
 gcc acc gta agc gag gcg ctc agc atc atc gcc ggc acc ctc gag gtc 432
 Ala Thr Val Ser Glu Ala Leu Ser Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140
 cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc 480
 His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160
 gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc 528
 Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175
 acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag 576

Thr	Ala	Ala	Asn	Ala	Ala	Pro	Ala	Asn	Asp	Lys	Ile	Thr	Val	Phe	Glu		
			180					185					190				
gcc	gcc	ttc	aac	gac	gcc	atc	aag	gcg	agc	acg	ggc	ggc	gcc	tac	gag		624
Ala	Ala	Phe	Asn	Asp	Ala	Ile	Lys	Ala	Ser	Thr	Gly	Gly	Ala	Tyr	Glu		
		195					200					205					
agc	tac	aag	ttc	atc	ccc	gcc	ctg	gag	gcc	gcc	gtc	aag	aaa	gcc	tac		672
Ser	Tyr	Lys	Phe	Ile	Pro	Ala	Leu	Glu	Ala	Ala	Val	Lys	Lys	Ala	Tyr		
	210					215					220						
gcc	gcc	acc	gtc	gcc	acc	gcg	ccg	gag	gtc	aag	tac	act	gtc	ttt	gag		720
Ala	Ala	Thr	Val	Ala	Thr	Ala	Pro	Glu	Val	Lys	Tyr	Thr	Val	Phe	Glu		
	225				230					235					240		
acc	gca	gaa	aaa	aag	gcc	atc	acc	gcc	atg	tcc	gaa	gca	aaa	aag	gct		768
Thr	Ala	Glu	Lys	Lys	Ala	Ile	Thr	Ala	Met	Ser	Glu	Ala	Lys	Lys	Ala		
			245					250						255			
gcc	aag	ccc	gcc	gcc	gct	gcc	acc	gcc	acc	gca	acc	gcc	gcc	gtt	ggc		816
Ala	Lys	Pro	Ala	Ala	Ala	Ala	Thr	Ala	Thr	Ala	Thr	Ala	Ala	Val	Gly		
			260					265					270				
gcg	gcc	acc	ggc	gcc	gcc	acc	gcc	gct	act	ggg	ggc	tac	aaa	gtc			861
Ala	Ala	Thr	Gly	Ala	Ala	Thr	Ala	Ala	Thr	Gly	Gly	Tyr	Lys	Val			
		275					280					285					

<210> 64
 <211> 287
 <212> PRT
 <213> Phleum pratense

<400> 64

Ala	Asp	Leu	Gly	Tyr	Gly	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Ala	Gly		
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Tyr	Thr	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Gly	Ala	Glu	Pro	Ala	Gly		
		20						25					30				
Lys	Ala	Thr	Thr	Glu	Glu	Gln	Lys	Leu	Ile	Glu	Lys	Lys	Asn	Ala	Gly		
		35					40					45					
Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Ala	Gly	Val	Pro	Pro	Ala	Asp	Lys		
	50					55					60						
Tyr	Arg	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	Ser	Asn	Lys	Ala	Phe		
65					70					75					80		
Ala	Glu	Gly	Leu	Ser	Gly	Glu	Pro	Lys	Gly	Ala	Ala	Glu	Ser	Ser	Ser		
			85						90					95			

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

Ala Thr Val Ser Glu Ala Leu Ser Ile Ile Ala Gly Thr Leu Glu Val
130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 65
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<212> DNA
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Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1          5          10          15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt      96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
          20          25          30

aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc      144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
          35          40          45

ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag      192
Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
          50          55          60

tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc      240
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65          70          75          80

gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc      288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
          85          90          95

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aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr 100 105 110	336
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val 115 120 125	384
gcc acc gta agc gag gcg ctc cgc aaa atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Glu Ala Leu Arg Lys Ile Ala Gly Thr Leu Glu Val 130 135 140	432
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly 145 150 155 160	480
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala 165 170 175	528
acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu 180 185 190	576
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu 195 200 205	624
agc tac aag ttc atc ccc gcc ctg gag gcc gcc gtc aag aaa gcc tac Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr 210 215 220	672
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu 225 230 235 240	720
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala 245 250 255	768
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly 260 265 270	816
gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val 275 280 285	861
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<212> PRT	
<213> Phleum pratense	
<400> 66	

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30
 Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45
 Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60
 Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80
 Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95
 Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110
 Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125
 Ala Thr Val Ser Glu Ala Leu Arg Lys Ile Ala Gly Thr Leu Glu Val
 130 135 140
 His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160
 Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175
 Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
 180 185 190
 Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205
 Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
 210 215 220
 Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu

225	230							235							240		
Thr	Ala	Glu	Lys	Lys	Ala	Ile	Thr	Ala	Met	Ser	Glu	Ala	Lys	Lys	Ala		
				245					250					255			
Ala	Lys	Pro	Ala	Ala	Ala	Ala	Thr	Ala	Thr	Ala	Thr	Ala	Ala	Val	Gly		
			260					265					270				
Ala	Ala	Thr	Gly	Ala	Ala	Thr	Ala	Ala	Thr	Gly	Gly	Tyr	Lys	Val			
		275					280					285					

<210>	67
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gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc
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Ala	Asp	Leu	Gly	Tyr	Gly	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Ala	Gly		
1				5					10						15		
tac	acc	ccc	gcc	acc	ccc	gcc	gcc	ccg	gcc	gga	gcg	gag	cca	gca	ggc		96
Tyr	Thr	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Gly	Ala	Glu	Pro	Ala	Gly		
			20					25					30				
aag	gcg	acg	acc	gag	gag	cag	aag	ctg	atc	gag	aag	aaa	aac	gcc	ggc		144
Lys	Ala	Thr	Thr	Glu	Glu	Gln	Lys	Leu	Ile	Glu	Lys	Lys	Asn	Ala	Gly		
		35					40					45					
ttc	aag	gcg	gcc	ttg	gcc	gct	gcc	gcc	ggc	gtc	ccg	cca	gag	gac	aag		192
Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Ala	Gly	Val	Pro	Pro	Ala	Asp	Lys		
	50					55					60						
tac	agg	acg	ttc	gtc	gca	acc	ttc	ggc	gag	gcc	tcc	aac	aag	gcc	ttc		240
Tyr	Arg	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	Ser	Asn	Lys	Ala	Phe		
65					70				75						80		
gcg	gag	ggc	ctc	tcg	ggc	gag	ccc	aag	ggc	gcc	gcc	gaa	tcc	agc	tcc		288
Ala	Glu	Gly	Leu	Ser	Gly	Glu	Pro	Lys	Gly	Ala	Ala	Glu	Ser	Ser	Ser		
			85						90					95			
aag	gcc	gag	ctc	acc	tcc	aag	ctc	gac	gcc	gcc	tac	aag	ctc	gcc	tac		336
Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	Tyr	Lys	Leu	Ala	Tyr		
			100					105					110				
aag	aca	gcc	gag	ggc	gag	acg	cct	gag	gcc	aag	tac	gac	gcc	tac	gtc		384
Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	Tyr	Asp	Ala	Tyr	Val		
		115					120					125					
gcc	acc	gta	agc	agc	gag	ctc	cgc	atc	atc	gcc	ggc	acc	ctc	gag	gtc		432
Ala	Thr	Val	Ser	Ser	Ala	Leu	Arg	Ile	Ile	Ala	Gly	Thr	Leu	Glu	Val		
		130				135					140						
cac	gcc	gtc	aag	ccc	gag	gcc	gag	gag	gtc	aag	gtc	atc	ccc	gcc	ggc		480
His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glu	Val	Lys	Val	Ile	Pro	Ala	Gly		
145					150				155						160		
gag	ctg	cag	gtc	atc	gag	aag	gtc	gac	gcc	gcc	ttc	aag	gtc	gct	gcc		528
Glu	Leu	Gln	Val	Ile	Glu	Lys	Val	Asp	Ala	Ala	Phe	Lys	Val	Ala	Ala		
			165					170						175			
acc	gcc	gcc	aac	gcc	gcc	ccc	gcc	aac	cat	aag	ttc	acc	gtc	ttc	gag		576
Thr	Ala	Ala	Asn	Ala	Ala	Pro	Ala	Asn	His	Lys	Phe	Thr	Val	Phe	Glu		
			180					185					190				
gcc	gcc	ttc	aac	gac	gcc	atc	aag	gag	agc	acg	ggc	ggc	gcc	tac	gag		624
Ala	Ala	Phe	Asn	Asp	Ala	Ile	Lys	Ala	Ser	Thr	Gly	Gly	Ala	Tyr	Glu		
		195					200					205					
agc	tac	aag	ttc	atc	ccc	gcc	ctg	gag	gcc	gcc	gtc	aag	aaa	gcc	tac		672
Ser	Tyr	Lys	Phe	Ile	Pro	Ala	Leu	Glu	Ala	Ala	Val	Lys	Lys	Ala	Tyr		
	210					215					220						
gcc	gcc	acc	gtc	gcc	acc	gag	ccg	gag	gtc	aag	tac	act	gtc	ttt	gag		720
Ala	Ala	Thr	Val	Ala	Thr	Ala	Pro	Glu	Val	Lys	Tyr	Thr	Val	Phe	Glu		

225	230	235	240	
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct				768
Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala	245	250	255	
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc				816
Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly	260	265	270	
gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc				861
Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val	275	280	285	
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Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly				
	20	25	30	
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly				
	35	40	45	
Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys				
	50	55	60	
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe				
65	70	75	80	
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser				
	85	90	95	
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr				
	100	105	110	
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val				
	115	120	125	
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val				
	130	135	140	

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

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Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1          5          10          15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt      96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
          20          25          30

aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc      144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
          35          40          45

ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag      192
Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
          50          55          60

tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc      240
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65          70          75          80

gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc      288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
          85          90          95

aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac      336
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
          100          105          110

aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc      384
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
          115          120          125

gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc      432
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
          130          135          140

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50	55	60
Tyr Arg Thr Phe Val	Ala Thr Phe Gly Ala	Ala Ser Asn Lys Ala Phe
65	70	75 80
Ala Glu Gly Leu Ser	Gly Glu Pro Lys Gly	Ala Ala Glu Ser Ser Ser
	85	90 95
Lys Ala Ala Leu Thr	Ser Lys Leu Asp Ala	Ala Tyr Lys Leu Ala Tyr
	100	105 110
Lys Thr Ala Glu Gly	Ala Thr Pro Glu Ala	Lys Tyr Asp Ala Tyr Val
	115	120 125
Ala Thr Val Ser Ser	Ala Leu Arg Ile Ile	Ala Gly Thr Leu Glu Val
	130	135 140
His Ala Val Lys Pro	Ala Ala Glu Glu Val	Lys Val Ile Pro Ala Gly
145	150	155 160
Glu Leu Gln Val Ile	Glu Lys Val Asp Ala	Ala Phe Lys Val Ala Ala
	165	170 175
Thr Ala Ala Asn Ala	Ala Pro Ala Asn Asp	Lys Phe Thr Val Phe Glu
	180	185 190
Ala Ala Phe Asn Asp	Ala Ile Lys Ala Ser	Thr Gly Gly Ala Tyr Glu
	195	200 205
Ser Tyr Lys Phe Ile	Pro Ala Leu Glu Ala	Ala Val Lys Lys Ala Tyr
	210	215 220
Ala Ala Thr Val Ala	Thr Ala Gly Glu Val	Lys Tyr Thr Val Phe Glu
225	230	235 240
Thr Ala Glu Lys Lys	Ala Ile Thr Ala Met	Ser Glu Ala Lys Lys Ala
	245	250 255
Ala Lys Pro Ala Ala	Ala Ala Thr Ala Thr	Ala Ala Val Gly
	260	265 270
Ala Ala Thr Gly Ala	Ala Ala Thr Gly Gly	Tyr Lys Val
	275	280 285

<210> 71
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 Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15
 tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt 96
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30
 aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc 144
 Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45
 ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag 192
 Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys

50	55	60	
tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe 65 70 75 80			240
gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser 85 90 95			288
aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr 100 105 110			336
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val 115 120 125			384
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val 130 135 140			432
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly 145 150 155 160			480
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala 165 170 175			528
acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu 180 185 190			576
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu 195 200 205			624
agc tac aag ttc atc ggc gcc ctg gag gcc gcc gtc aag cag gcc tac Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr 210 215 220			672
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu 225 230 235 240			720
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala 245 250 255			768
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Val Gly 260 265 270			816
gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val 275 280 285			861

<210> 72
 <211> 287
 <212> PRT
 <213> Phleum pratense

<400> 72

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 73
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<400> 73

gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc	48
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly	
1 5 10 15	
tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt	96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly	
20 25 30	
aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc	144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly	
35 40 45	
ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag	192
Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys	
50 55 60	
tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc	240
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe	
65 70 75 80	
gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc	288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser	
85 90 95	
aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac	336
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr	
100 105 110	
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc	384
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val	
115 120 125	
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc	432
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val	
130 135 140	
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc	480
His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly	
145 150 155 160	
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc	528
Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala	
165 170 175	
acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag	576
Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu	
180 185 190	
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag	624

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

agc tac aac ttc atc ccc gcc ctg gag gcc gcc gtc aag cag gcc tac 672
Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
210 215 220

gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag 720
Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct 768
Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc 816
Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc 861
Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 74
<211> 287
<212> PRT
<213> Phleum pratense

<400> 74

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125
 Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140
 His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160
 Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175
 Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
 180 185 190
 Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205
 Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
 210 215 220
 Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240
 Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255
 Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270
 Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

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<400> 75
gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc      48
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1          5          10          15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt      96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
          20          25          30

aag gcg acg acc gag gag cag aag ctg atc gag aag atc aac gcc ggc      144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
          35          40          45

ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag      192
Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
          50          55          60

tac aac acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc      240
Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65          70          75          80

gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc      288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
          85          90          95

aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac      336
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
          100          105          110

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aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val 115 120 125	384
gcc acc gta agc gag gcg ctc agc atc atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Glu Ala Leu Ser Ile Ile Ala Gly Thr Leu Glu Val 130 135 140	432
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly 145 150 155 160	480
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala 165 170 175	528
acc gcc gcc aac gcc gcc ccc gcc aac gac aag att acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu 180 185 190	576
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu 195 200 205	624
agc tac aag ttc atc ccc gcc ctg gag gcc gcc gtc aag aaa gcc tac Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr 210 215 220	672
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu 225 230 235 240	720
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala 245 250 255	768
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly 260 265 270	816
gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val 275 280 285	861

<210> 76
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 <212> PRT
 <213> Phleum pratense

<400> 76

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Glu Ala Leu Ser Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala

245	250	255
Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly		
260	265	270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 77
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gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc	48
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly	
1 5 10 15	
tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt	96

Tyr	Thr	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Gly	Ala	Glu	Pro	Ala	Gly		
			20					25					30				
aag	gcg	acg	acc	gag	gag	cag	aag	ctg	atc	gag	aag	atc	aac	gcc	ggc	144	
Lys	Ala	Thr	Thr	Glu	Glu	Gln	Lys	Leu	Ile	Glu	Lys	Ile	Asn	Ala	Gly		
		35					40				45						
ttc	aag	gcg	gcc	ttg	gcc	gct	gcc	gcc	ggc	gtc	ccg	cca	gcg	gac	aag	192	
Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Ala	Gly	Val	Pro	Pro	Ala	Asp	Lys		
	50				55					60							
tac	aac	acg	ttc	gtc	gca	acc	ttc	ggc	gcg	gcc	tcc	aac	aag	gcc	ttc	240	
Tyr	Asn	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	Ser	Asn	Lys	Ala	Phe		
65				70				75						80			
gcg	gag	ggc	ctc	tcg	ggc	gag	ccc	aag	ggc	gcc	gcc	gaa	tcc	agc	tcc	288	
Ala	Glu	Gly	Leu	Ser	Gly	Glu	Pro	Lys	Gly	Ala	Ala	Glu	Ser	Ser	Ser		
			85					90					95				
aag	gcc	gcg	ctc	acc	tcc	aag	ctc	gac	gcc	gcc	tac	aag	ctc	gcc	tac	336	
Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	Tyr	Lys	Leu	Ala	Tyr		
		100					105					110					
aag	aca	gcc	gag	ggc	gcg	acg	cct	gag	gcc	aag	tac	gac	gcc	tac	gtc	384	
Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	Tyr	Asp	Ala	Tyr	Val		
	115						120				125						
gcc	acc	gta	agc	gag	gcg	ctc	cgc	aaa	atc	gcc	ggc	acc	ctc	gag	gtc	432	
Ala	Thr	Val	Ser	Glu	Ala	Leu	Arg	Lys	Ile	Ala	Gly	Thr	Leu	Glu	Val		
	130				135					140							
cac	gcc	gtc	aag	ccc	gcg	gcc	gag	gag	gtc	aag	gtc	atc	ccc	gcc	ggc	480	
His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glu	Val	Lys	Val	Ile	Pro	Ala	Gly		
145				150				155						160			
gag	ctg	cag	gtc	atc	gag	aag	gtc	gac	gcc	gcc	ttc	aag	gtc	gct	gcc	528	
Glu	Leu	Gln	Val	Ile	Glu	Lys	Val	Asp	Ala	Ala	Phe	Lys	Val	Ala	Ala		
		165					170				175						
acc	gcc	gcc	aac	gcc	gcc	ccc	gcc	aac	gac	aag	att	acc	gtc	ttc	gag	576	
Thr	Ala	Ala	Asn	Ala	Ala	Pro	Ala	Asn	Asp	Lys	Ile	Thr	Val	Phe	Glu		
		180					185				190						
gcc	gcc	ttc	aac	gac	gcc	atc	aag	gcg	agc	acg	ggc	ggc	gcc	tac	gag	624	
Ala	Ala	Phe	Asn	Asp	Ala	Ile	Lys	Ala	Ser	Thr	Gly	Gly	Ala	Tyr	Glu		
	195					200					205						
agc	tac	aag	ttc	atc	ccc	gcc	ctg	gag	gcc	gcc	gtc	aag	aaa	gcc	tac	672	
Ser	Tyr	Lys	Phe	Ile	Pro	Ala	Leu	Glu	Ala	Ala	Val	Lys	Lys	Ala	Tyr		
	210				215			220									
gcc	gcc	acc	gtc	gcc	acc	gcg	ccg	gag	gtc	aag	tac	act	gtc	ttt	gag	720	
Ala	Ala	Thr	Val	Ala	Thr	Ala	Pro	Glu	Val	Lys	Tyr	Thr	Val	Phe	Glu		
225				230				235						240			
acc	gca	gaa	aaa	aag	gcc	atc	acc	gcc	atg	tcc	gaa	gca	aaa	aag	gct	768	
Thr	Ala	Glu	Lys	Lys	Ala	Ile	Thr	Ala	Met	Ser	Glu	Ala	Lys	Lys	Ala		

	245	250	255	
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc				816
Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly				
	260	265	270	
gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc				861
Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val				
	275	280	285	
<210>	78			
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<212>	PRT			
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Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly				
1	5	10	15	
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly				
	20	25	30	
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly				
	35	40	45	
Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys				
	50	55	60	
Tyr Asn Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe				
65	70	75	80	
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser				
	85	90	95	
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr				
	100	105	110	
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val				
	115	120	125	
Ala Thr Val Ser Glu Ala Leu Arg Lys Ile Ala Gly Thr Leu Glu Val				
	130	135	140	
His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly				
145	150	155	160	

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Ile Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Lys Ala Tyr
210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
275 280 285

<210> 79
<211> 861
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<213> Phleum pratense

<220>
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<222> (727)..(729)

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<222> (760)..(762)

<223>

<400> 79

gcc	gat	ctc	ggg	tac	ggc	ccc	gcc	acc	cca	gct	gcc	ccg	gcc	gcc	ggc	48
Ala	Asp	Leu	Gly	Tyr	Gly	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Ala	Gly	
1			5					10					15			

tac	acc	ccc	gcc	acc	ccc	gcc	gcc	ccg	gcc	gga	gcg	gag	cca	gca	ggg	96
Tyr	Thr	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Gly	Ala	Glu	Pro	Ala	Gly	
		20					25					30				

aag	gcg	acg	acc	gag	gag	cag	aag	ctg	atc	gag	aag	aaa	aac	gcc	ggc	144
Lys	Ala	Thr	Thr	Glu	Glu	Gln	Lys	Leu	Ile	Glu	Lys	Lys	Asn	Ala	Gly	
		35				40						45				

ttc	aag	gcg	gcc	ttg	gcc	gct	gcc	gcc	ggc	gtc	ccg	cca	gcg	gac	aag	192
Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Ala	Gly	Val	Pro	Pro	Ala	Asp	Lys	
	50				55					60						

tac	agg	acg	ttc	gtc	gca	acc	ttc	ggc	gcg	gcc	tcc	aac	aag	gcc	ttc	240
Tyr	Arg	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	Ser	Asn	Lys	Ala	Phe	
65				70				75						80		

gcg	gag	ggc	ctc	tcg	ggc	gag	ccc	aag	ggc	gcc	gcc	gaa	tcc	agc	tcc	288
Ala	Glu	Gly	Leu	Ser	Gly	Glu	Pro	Lys	Gly	Ala	Ala	Glu	Ser	Ser	Ser	
			85					90						95		

aag	gcc	gcg	ctc	acc	tcc	aag	ctc	gac	gcc	gcc	tac	aag	ctc	gcc	tac	336
Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	Tyr	Lys	Leu	Ala	Tyr	
			100				105						110			

aag	aca	gcc	gag	ggc	gcg	acg	cct	gag	gcc	aag	tac	gac	gcc	tac	gtc	384
Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	Tyr	Asp	Ala	Tyr	Val	
		115				120						125				

gcc	acc	gta	agc	agc	gcg	ctc	cgc	atc	atc	gcc	ggc	acc	ctc	gag	gtc	432
Ala	Thr	Val	Ser	Ser	Ala	Leu	Arg	Ile	Ile	Ala	Gly	Thr	Leu	Glu	Val	
	130					135					140					

cac	gcc	gtc	aag	ccc	gcg	gcc	gag	gag	gtc	aag	gtc	atc	ccc	gcc	ggc	480
His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glu	Val	Lys	Val	Ile	Pro	Ala	Gly	
145					150					155					160	

gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc	528
Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala	
165 170 175	
acc gcc gcc aac gcc gcc ccc gcc aac cat aag ttc acc gtc ttc gag	576
Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu	
180 185 190	
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag	624
Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu	
195 200 205	
agc tac aag ttc atc ggc gcc ctg gag gcc gcc gtc aag cag gcc tac	672
Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr	
210 215 220	
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag	720
Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu	
225 230 235 240	
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct	768
Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala	
245 250 255	
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc	816
Ala Lys Pro Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly	
260 265 270	
gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc	861
Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val	
275 280 285	

<210> 80
 <211> 287
 <212> PRT
 <213> Phleum pratense

<400> 80

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly	
1 5 10 15	
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly	
20 25 30	
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly	
35 40 45	
Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys	
50 55 60	
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe	

65		70		75		80									
Ala	Glu	Gly	Leu	Ser	Gly	Glu	Pro	Lys	Gly	Ala	Ala	Glu	Ser	Ser	Ser
				85					90					95	
Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	Tyr	Lys	Leu	Ala	Tyr
			100					105					110		
Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	Tyr	Asp	Ala	Tyr	Val
		115					120					125			
Ala	Thr	Val	Ser	Ser	Ala	Leu	Arg	Ile	Ile	Ala	Gly	Thr	Leu	Glu	Val
		130					135					140			
His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glu	Val	Lys	Val	Ile	Pro	Ala	Gly
145					150					155					160
Glu	Leu	Gln	Val	Ile	Glu	Lys	Val	Asp	Ala	Ala	Phe	Lys	Val	Ala	Ala
			165						170					175	
Thr	Ala	Ala	Asn	Ala	Ala	Pro	Ala	Asn	His	Lys	Phe	Thr	Val	Phe	Glu
			180					185					190		
Ala	Ala	Phe	Asn	Asp	Ala	Ile	Lys	Ala	Ser	Thr	Gly	Gly	Ala	Tyr	Glu
		195					200					205			
Ser	Tyr	Lys	Phe	Ile	Gly	Ala	Leu	Glu	Ala	Ala	Val	Lys	Gln	Ala	Tyr
	210					215					220				
Ala	Ala	Thr	Val	Ala	Thr	Ala	Pro	Glu	Val	Lys	Tyr	Thr	Val	Phe	Glu
225					230					235					240
Thr	Ala	Glu	Lys	Lys	Ala	Ile	Thr	Ala	Met	Ser	Glu	Ala	Lys	Lys	Ala
				245					250					255	
Ala	Lys	Pro	Ala	Ala	Ala	Ala	Thr	Ala	Thr	Ala	Thr	Ala	Ala	Val	Gly
			260					265					270		
Ala	Ala	Thr	Gly	Ala	Ala	Thr	Ala	Ala	Thr	Gly	Gly	Tyr	Lys	Val	
		275					280					285			

<210> 81
 <211> 861

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<212> DNA
<213> Phleum pratense

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<400> 81
gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc      48
Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1          5          10          15

tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt      96
Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
          20          25          30

aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc      144
Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
          35          40          45

ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag      192
Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
          50          55          60

tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc      240
Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe

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65	70	75	80	
gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc				288
Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser	85	90	95	
aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac				336
Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr	100	105	110	
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc				384
Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val	115	120	125	
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc				432
Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val	130	135	140	
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc				480
His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly	145	150	155	160
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc				528
Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala	165	170	175	
acc gcc gcc aac gcc gcc ccc gcc aac cat aag ttc acc gtc ttc gag				576
Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu	180	185	190	
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag				624
Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu	195	200	205	
agc tac aac ttc atc ccc gcc ctg gag gcc gcc gtc aag cag gcc tac				672
Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr	210	215	220	
gcc gcc acc gtc gcc acc gcg ccg gag gtc aag tac act gtc ttt gag				720
Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu	225	230	235	240
acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct				768
Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala	245	250	255	
gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc				816
Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly	260	265	270	
gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc				861
Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val	275	280	285	
<210>	82			
<211>	287			

<212> PRT
<213> Phleum pratense

<400> 82

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn His Lys Phe Thr Val Phe Glu
180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
195 200 205

Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 83
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 <212> DNA
 <213> Phleum pratense

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 <222> (694)..(696)
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 <222> (727)..(729)
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<222> (760) .. (762)

<223>

<400> 83

gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly 1 5 10 15	48
tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly 20 25 30	96
aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly 35 40 45	144
ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys 50 55 60	192
tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe 65 70 75 80	240
gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser 85 90 95	288
aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr 100 105 110	336
aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val 115 120 125	384
gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val 130 135 140	432
cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly 145 150 155 160	480
gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala 165 170 175	528
acc gcc gcc aac gcc gcc ccc gcc aac gac aag ttc acc gtc ttc gag Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu 180 185 190	576
gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu 195 200 205	624
agc tac aag ttc atc ggc gcc ctg gag gcc gcc gtc aag cag gcc tac	672

Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
 210 215 220
 gcc gcc acc gtc gcc acc gcg ggc gag gtc aag tac act gtc ttt gag 720
 Ala Ala Thr Val Ala Thr Ala Gly Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240
 acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct 768
 Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255
 gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc 816
 Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270
 gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc 861
 Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 84
 <211> 287
 <212> PRT
 <213> Phleum pratense

<400> 84

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140
 His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160
 Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175
 Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu
 180 185 190
 Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205
 Ser Tyr Lys Phe Ile Gly Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
 210 215 220
 Ala Ala Thr Val Ala Thr Ala Gly Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240
 Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255
 Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270
 Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 85
 <211> 861
 <212> DNA
 <213> Phleum pratense

<220>
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 <222> (760)..(762)
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<400> 85
 gcc gat ctc ggt tac ggc ccc gcc acc cca gct gcc ccg gcc gcc ggc 48
 Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15
 tac acc ccc gcc acc ccc gcc gcc ccg gcc gga gcg gag cca gca ggt 96
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30
 aag gcg acg acc gag gag cag aag ctg atc gag aag aaa aac gcc ggc 144
 Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45
 ttc aag gcg gcc ttg gcc gct gcc gcc ggc gtc ccg cca gcg gac aag 192
 Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60
 tac agg acg ttc gtc gca acc ttc ggc gcg gcc tcc aac aag gcc ttc 240
 Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80
 gcg gag ggc ctc tcg ggc gag ccc aag ggc gcc gcc gaa tcc agc tcc 288
 Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95
 aag gcc gcg ctc acc tcc aag ctc gac gcc gcc tac aag ctc gcc tac 336
 Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110
 aag aca gcc gag ggc gcg acg cct gag gcc aag tac gac gcc tac gtc 384
 Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

gcc acc gta agc agc gcg ctc cgc atc atc gcc ggc acc ctc gag gtc 432
 Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

cac gcc gtc aag ccc gcg gcc gag gag gtc aag gtc atc ccc gcc ggc 480
 His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

gag ctg cag gtc atc gag aag gtc gac gcc gcc ttc aag gtc gct gcc 528
 Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

acc gcc gcc aac gcc gcc ccc gcc aac gac aag ttc acc gtc ttc gag 576
 Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu
 180 185 190

gcc gcc ttc aac gac gcc atc aag gcg agc acg ggc ggc gcc tac gag 624
 Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

agc tac aac ttc atc ccc gcc ctg gag gcc gcc gtc aag cag gcc tac 672
 Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
 210 215 220

gcc gcc acc gtc gcc acc gcg ggc gag gtc aag tac act gtc ttt gag 720
 Ala Ala Thr Val Ala Thr Ala Gly Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

acc gca gaa aaa aag gcc atc acc gcc atg tcc gaa gca aaa aag gct 768
 Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

gcc aag ccc gcc gcc gct gcc acc gcc acc gca acc gcc gcc gtt ggc 816
 Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly
 260 265 270

gcg gcc acc ggc gcc gcc acc gcc gct act ggt ggc tac aaa gtc 861
 Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 86
 <211> 287
 <212> PRT
 <213> Phleum pratense

<400> 86

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Lys Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Ser Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu
 195 200 205

Ser Tyr Asn Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr
 210 215 220

Ala Ala Thr Val Ala Thr Ala Gly Glu Val Lys Tyr Thr Val Phe Glu
 225 230 235 240

Thr Ala Glu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Lys Lys Ala
 245 250 255

Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly

260

265

270

Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 87
 <211> 666
 <212> DNA
 <213> Dermatophagoides pteronyssinus

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<400> 87
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 Thr Asn Ala Cys Ser Ile Asn Gly Asn Ala Pro Ala Glu Ile Asp Leu
 1 5 10 15
 cga caa atg cga act gtc act ccc att cgt atg caa gga ggc tgt ggt 96
 Arg Gln Met Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
 20 25 30
 tca tgt tgg gct ttc tct ggt gtt gcc gca act gaa tca gct tat ttg 144
 Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
 35 40 45
 gct tac cgt aat caa tca ttg gat ctt gct gaa caa gaa tta gtc gat 192
 Ala Tyr Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60
 tgt gct tcc caa cac ggt tgt cat ggt gat acc att cca cgt ggt att 240
 Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
 65 70 75 80
 gaa tac atc caa cat aat ggt gtc gtc caa gaa agc tac tat cga tac 288
 Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95
 gtt gca cga gaa caa tca tgc cga cga cca aat gca caa cgt ttc ggt 336
 Val Ala Arg Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
 100 105 110
 atc tca aac tat tgc caa att tac cca cca aat gta aac aaa att cgt 384
 Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
 115 120 125
 gaa gct ttg gct caa acc cac agc gct att gcc gtc att att ggc atc 432
 Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140
 aaa gat tta gac gca ttc cgt cat tat gat ggc cga aca atc att caa 480
 Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Arg Thr Ile Ile Gln
 145 150 155 160

cgc gat aat ggt tac caa cca aac tat cac gct gtc aac att gtt ggt 528
 Arg Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile Val Gly
 165 170 175

tac agt aac gca caa ggt gtc gat tat tgg atc gta cga aac agt tgg 576
 Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
 180 185 190

gat acc aat tgg ggt gat aat ggt tac ggt tat ttt gct gcc aac atc 624
 Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
 195 200 205

gat ttg atg atg att gaa gaa tat cca tat gtt gtc att ctc 666
 Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
 210 215 220

<210> 88
 <211> 222
 <212> PRT
 <213> Dermatophagoides pteronyssinus
 <400> 88

Thr Asn Ala Cys Ser Ile Asn Gly Asn Ala Pro Ala Glu Ile Asp Leu
 1 5 10 15

Arg Gln Met Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly
 20 25 30

Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu
 35 40 45

Ala Tyr Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp
 50 55 60

Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile
 65 70 75 80

Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr Arg Tyr
 85 90 95

Val Ala Arg Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg Phe Gly
 100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys Ile Arg
 115 120 125

Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile Gly Ile
 130 135 140

Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Arg Thr Ile Ile Gln
 145 150 155 160

Arg Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile Val Gly
 165 170 175

Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
 180 185 190

Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn Ile
 195 200 205

Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
 210 215 220

<210> 89
 <211> 387
 <212> DNA
 <213> Dermatophagoides pteronyssinus

<220>
 <221> CDS
 <222> (1)..(387)
 <223>

<400> 89
 gat caa gtc gat gtc aaa gat tgt gcc aat cat gaa atc aaa aaa gtt 48
 Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
 1 5 10 15

ttg gta cca gga tgc cat ggt tca gaa cca tgt atc att cat cgt ggt 96
 Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
 20 25 30

aaa cca ttc caa ttg gaa gcc gtt ttc gaa gcc aac caa aac aca aaa 144
 Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys
 35 40 45

acc gct aaa att gaa atc aaa gcc tca atc gat ggt tta gaa gtt gat 192
 Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
 50 55 60

gtt ccc ggt atc gat cca aat gca tgc cat tac atg aaa tgc cca ttg 240
 Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
 65 70 75 80

gtt aaa gga caa caa tat gat att aaa tat aca tgg aat gtt ccg aaa 288
 Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys

	85	90	95	
att gca cca aaa tct gaa aat gtt gtc gtc act gtt aaa gtt atg ggt				336
Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly				
	100	105	110	
gat gat ggt gtt ttg gcc tgt gct att gct act cat gct aaa atc cgc				384
Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg				
	115	120	125	
gat				387
Asp				

<210> 90
 <211> 129
 <212> PRT
 <213> Dermatophagoides pteronyssinus

<400> 90

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val			
1	5	10	15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly			
	20	25	30

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys			
	35	40	45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp			
	50	55	60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu			
65	70	75	80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys			
	85	90	95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly			
	100	105	110

Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg			
	115	120	125

Asp

<210> 91
 <211> 480
 <212> DNA
 <213> Betula verrucosa

<400> 91
 ggtgtgttta attatgagac tgagaccacc tctgttatcc cagcagctcg actgttcaag 60
 gcctttatcc ttgatggcga taacctcttt ccaaagggtg caccccaagc cattagcagt 120
 gttgaaaaca ttgaaggaaa tggagggcct ggaaccatta agaagatcag ctttcccgaa 180
 ggctccctt tcaagtacgt gaaggacaga gttgatgagg tggaccacac aaacttcaaa 240
 tacaattaca gcgtgatcga gggcgggtccc ataggcgaca cattggagaa gatctccaac 300
 gagataaaga tagtggcaac ccctgatgga ggatccatct tgaagatcag caacaagtac 360
 cacaccaaag gtgaccatga ggtgaaggca gagcagggtta aggcaagtaa agaaatgggc 420
 gagacacttt tgagggccgt tgagagctac ctcttggcac actccgatgc ctacaactaa 480

<210> 92
 <211> 159
 <212> PRT
 <213> Betula verrucosa

<400> 92

Gly Val Phe Asn Tyr Glu Thr Glu Thr Thr Ser Val Ile Pro Ala Ala
 1 5 10 15

Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro Lys
 20 25 30

Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Glu Gly Asn Gly
 35 40 45

Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
 50 55 60

Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
 65 70 75 80

Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
 85 90 95

Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly Ser
 100 105 110

Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
 115 120 125

Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu Leu
 130 135 140

Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn
 145 150 155

<210> 93
 <211> 387
 <212> DNA
 <213> Dermatophagoides pteronyssinus

<400> 93
 gatcaagtcg atgtcaaaga ttgtgccaat catgaaatca aaaaagtttt ggtaccagga 60
 tgccatgggt cagaaccatg tatcattcat cgtggtaaac cattccaatt ggaagcttta 120
 ttogaagcca atcaaaactc aaaaacagct aaaattgaaa tcaaagcttc aatcgatggt 180
 ttagaagttg atgttccccg tatcgatcca aatgcatgcc attatatgaa atgtccattg 240
 gttaaaggac aacaatatga tattaaatat acatggaatg ttccaaaaat tgcacaaaaa 300
 tctgaaaatg ttgtcgtcac tggttaaagtt ttgggtgata atgggtgtttt ggctgtgct 360
 attgctactc atgctaaaat ccgcgat 387

<210> 94
 <211> 129
 <212> PRT
 <213> Dermatophagoides pteronyssinus

<400> 94

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
 1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
 20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Lys
 35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
 50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Leu Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

<210> 95
<211> 861
<212> DNA
<213> Phleum pratense

<400> 95
gccgatctcg gttacggccc cgccacccca gctgccccgg ccgccggcta ccccccgcc 60
acccccgccg ccccgggccgg agcggagcca gcaggttaagg cgacgaccga ggagcagaag 120
ctgatcgaga agatcaacgc cggcttcaag gcggccttgg ccgctgccgc cggcgctccc 180
ccagcggaca agtacaggac gttcgtcgca accttcggcg cggcctccaa caaggccttc 240
gcggagggcc tctcggggcg gcccaagggc gccgccgaat ccagctccaa ggccgcgctc 300
acctccaagc tcgacgccgc ctacaagctc gcctacaaga cagccgaggg cgcgacgcct 360
gaggccaagt acgacgccta cgtcgccacc gtaagcgagg cgctccgcat catcgccggc 420
accctcgagg tccacgccgt caagcccgcg gccgaggagg tcaaggtcat ccccgccggc 480
gagctgcagg tcatcgagaa ggtcgacgcc gccttcaagg tcgctgccac cgccgccaac 540
gccgcccccg ccaacgacaa gttcacgcgc ttcgaggccg ccttcaacga cgccatcaag 600
gcgagcacgg gcggcgcccta cgagagctac aagttcatcc ccgccctgga ggccgcccgc 660
aagcaggcct acgccgccac cgtcgccacc gcgccggagg tcaagtacac tgtctttgag 720
accgcactga aaaaggccat caccgccatg tccgaagcac agaaggctgc caagccccgcc 780
gccgctgcca ccgccaccgc aaccgccgcc gttggcgcg ccaccggcgc cgccaccgcc 840
gctactggtg gctacaaagt c 861

<210> 96
 <211> 287
 <212> PRT
 <213> Phleum pratense

<400> 96

Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15

Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Glu Pro Ala Gly
 20 25 30

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val Pro Pro Ala Asp Lys
 50 55 60

Tyr Arg Thr Phe Val Ala Thr Phe Gly Ala Ala Ser Asn Lys Ala Phe
 65 70 75 80

Ala Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser
 85 90 95

Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr
 100 105 110

Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val
 115 120 125

Ala Thr Val Ser Glu Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val
 130 135 140

His Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly
 145 150 155 160

Glu Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala
 165 170 175

Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu
 180 185 190

Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu

195	200	205	
Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr			
210	215	220	
Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu			
225	230	235	240
Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Gln Lys Ala			
245	250	255	
Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly			
260	265	270	
Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val			
275	280	285	
<210>	97		
<211>	41		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	oligonucleotide primer		
<400>	97		
aattatgaga ctgagaccac ctctgttatc ccagcagctc g			41
<210>	98		
<211>	41		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	oligonucleotide primer		
<400>	98		
cgagctgctg ggataacaga ggtggtctca gtctcataat t			41
<210>	99		
<211>	23		
<212>	DNA		
<213>	Artificial Sequence		
<220>			
<223>	oligonucleotide primer		
<400>	99		
tgagaccccc tctgttatcc cag			23

<210> 100
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide primer

 <400> 100
 acagagggggg tctcagtctc ata 23

<210> 101
 <211> 15
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide primer

 <400> 101
 gttgccaacg atcag 15

<210> 102
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide primer

 <400> 102
 gataccctct ttccacaggt tgcaccccaa g 31

<210> 103
 <211> 31
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide primer

 <400> 103
 acctgtggaa agagggtatc gccatcaagg a 31

<210> 104
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide primer

<400> 104 aacatttcag gaaatggagg gcc	23
<210> 105 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> oligonucleotide primer	
<400> 105 tttctgaaa tgttttcaac act	23
<210> 106 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> oligonucleotide primer	
<400> 106 ttaagaacat cagctttccc gaa	23
<210> 107 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> oligonucleotide primer	
<400> 107 agctgatggt cttaatgggt cca	23
<210> 108 <211> 23 <212> DNA <213> Artificial Sequence	
<220> <223> oligonucleotide primer	
<400> 108 ggaccatgca aacttcaa at aca	23
<210> 109 <211> 23 <212> DNA <213> Artificial Sequence	

<220>
 <223> oligonucleotide primer

 <400> 109
 agtttgcattg gtccacctca tca 23

<210> 110
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide primer

 <400> 110
 tttccctcag gcctcccttt caa 23

<210> 111
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide primer

 <400> 111
 aggctgagg gaaagctgat ctt 23

<210> 112
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide primer

 <400> 112
 tgaaggatct ggagggcctg gaac 24

<210> 113
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide primer

 <400> 113
 ccctccagat ccttcaatgt ttcc 24

<210> 114

<211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<400> 114
 ggcaactggt gatggaggat ccat 24

<210> 115
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<400> 115
 ccatcaccag ttgccactat cttt 24

<210> 116
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide primer

<400> 116
 catgccatcc gtaag 15

<210> 117
 <211> 202
 <212> PRT
 <213> Vespula

<220>
 <221> MISC_FEATURE
 <222> (1)..(202)
 <223> where X is any amino acid

<400> 117

Asn	Asn	Tyr	Cys	Lys	Ile	Lys	Cys	Leu	Lys	Gly	Gly	Val	His	Thr	Ala
1				5					10					15	

Cys	Lys	Tyr	Gly	Ser	Leu	Lys	Pro	Asn	Cys	Gly	Asn	Lys	Val	Val	Val
			20					25					30		

Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His

35	40	45
Asn Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro		
50	55	60
Gly Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asn Asp		
65	70	75 80
Glu Leu Ala Tyr Val Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly		
	85	90 95
His Asp Thr Cys Arg Asp Val Ala Lys Tyr Gln Val Gly Gln Asn Val		
	100	105 110
Ala Leu Thr Gly Ser Thr Ala Ala Lys Tyr Asp Asp Pro Xaa Xaa Leu		
	115	120 125
Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Lys		
	130	135 140
Phe Ser Gly Asn Asp Phe Leu Lys Thr Gly His Tyr Thr Gln Met Val		
145	150	155 160
Trp Ala Asn Thr Lys Glu Val Gly Cys Gly Ser Ile Lys Tyr Ile Gln		
	165	170 175
Glu Lys Trp His Lys His Tyr Leu Val Cys Asn Tyr Gly Pro Ser Gly		
	180	185 190
Asn Phe Asn Glu Glu Leu Xaa Xaa Thr Lys		
	195	200

<210> 118
 <211> 203
 <212> PRT
 <213> Vespula

<220>
 <221> MISC_FEATURE
 <222> (1)..(203)
 <223> where X is any amino acid

<400> 118

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala

1	5	10	15
Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Val	20	25	30
Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His	35	40	45
Asn Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro	50	55	60
Gly Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asn Asp	65	70	75
Glu Leu Ala Tyr Val Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly	85	90	95
His Asp Thr Cys Arg Asp Val Ala Lys Tyr Gln Val Gly Gln Asn Val	100	105	110
Ala Leu Thr Gly Ser Thr Ala Ala Lys Tyr Asp Asp Pro Xaa Xaa Leu	115	120	125
Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Lys	130	135	140
Phe Ser Gly Asn Asp Phe Leu Lys Thr Gly His Tyr Thr Gln Met Val	145	150	155
Trp Ala Asn Thr Lys Glu Val Gly Cys Gly Ser Ile Lys Tyr Ile Gln	165	170	175
Glu Lys Trp His Lys His Tyr Leu Val Cys Asn Tyr Gly Pro Ser Gly	180	185	190
Asn Phe Lys Asn Glu Glu Leu Xaa Xaa Thr Lys	195	200	

<210> 119
 <211> 201
 <212> PRT
 <213> Vesputa

<220>

<221> MISC_FEATURE
 <222> (1)..(201)
 <223> where X is any amino acid

<400> 119

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
 1 5 10 15

Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Val
 20 25 30

Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His
 35 40 45

Asn Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro
 50 55 60

Gly Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asn Asp
 65 70 75 80

Glu Leu Ala Tyr Val Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly
 85 90 95

His Asp Thr Cys Arg Asp Xaa Ala Lys Tyr Gln Val Gly Gln Asn Val
 100 105 110

Ala Leu Thr Gly Ser Thr Ala Ala Lys Tyr Asp Asp Pro Xaa Xaa Leu
 115 120 125

Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Lys
 130 135 140

Phe Ser Gly Asn Phe Leu Lys Thr Gly His Tyr Thr Gln Met Val Trp
 145 150 155 160

Ala Asn Thr Lys Glu Val Gly Cys Gly Ser Ile Lys Phe Ile Gln Glu
 165 170 175

Lys Trp His Lys His Tyr Leu Val Cys Asn Tyr Gly Pro Ser Gly Asn
 180 185 190

Phe Asn Glu Glu Leu Xaa Xaa Thr Lys
 195 200

<210> 120
 <211> 194
 <212> PRT
 <213> Vespula

<220>
 <221> MISC_FEATURE
 <222> (1)..(194)
 <223> where X is any amino acid

<400> 120

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
 1 5 10 15

Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Val Val Ser
 20 25 30

Tyr Gly Leu Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His Asn
 35 40 45

Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro Gly
 50 55 60

Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asp Glu Leu
 65 70 75 80

Ala Tyr Xaa Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly His Asp
 85 90 95

Thr Cys Arg Asp Val Ala Lys Tyr Gln Val Gly Gln Asn Val Ala Leu
 100 105 110

Thr Gly Ser Thr Ala Ala Tyr Asp Pro Xaa Xaa Leu Val Lys Met Trp
 115 120 125

Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Lys Phe Ser Asn Phe
 130 135 140

Leu Lys Gly His Tyr Thr Gln Met Val Trp Ala Asn Thr Lys Glu Val
 145 150 155 160

Gly Cys Gly Ser Ile Lys Tyr Ile Gln Glu Trp His Lys His Tyr Leu
 165 170 175

Val Cys Asn Tyr Gly Pro Ser Gly Asn Phe Asn Glu Glu Leu Xaa Xaa
180 185 190

Thr Lys

<210> 121
<211> 198
<212> PRT
<213> Vespula

<220>
<221> MISC_FEATURE
<222> (1)..(198)
<223> where X can be any amino acid

<400> 121

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
1 5 10 15

Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys Gly Asn Lys Xaa Val Val
20 25 30

Ser Tyr Gly Leu Thr Lys Glu Lys Gln Asp Ile Leu Lys Glu His Asn
35 40 45

Asp Phe Arg Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro Gly
50 55 60

Pro Gln Pro Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asn Asp Glu
65 70 75 80

Leu Ala Tyr Val Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly His
85 90 95

Asp Thr Cys Arg Asp Val Ala Lys Tyr Val Gly Gln Asn Val Ala Leu
100 105 110

Thr Gly Ser Thr Ala Lys Tyr Asp Pro Xaa Xaa Leu Val Lys Met Trp
115 120 125

Glu Asp Glu Val Lys Asp Tyr Asn Pro Lys Lys Lys Phe Ser Gly Asn
130 135 140

Asp Phe Leu Lys Thr Gly His Tyr Thr Gln Met Val Trp Ala Asn Thr
 145 150 155 160

Lys Glu Val Gly Cys Gly Ser Ile Lys Tyr Ile Gln Glu Lys Trp His
 165 170 175

Lys His Tyr Leu Val Cys Asn Tyr Gly Pro Ser Gly Asn Phe Asn Glu
 180 185 190

Glu Leu Xaa Xaa Thr Lys
 195

<210> 122
 <211> 192
 <212> PRT
 <213> Vesputia

<220>
 <221> MISC_FEATURE
 <222> (1)..(192)
 <223> where X is any amino acid

<400> 122

Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala
 1 5 10 15

Cys Lys Tyr Ser Leu Lys Pro Asn Cys Asn Lys Val Val Tyr Gly Leu
 20 25 30

Thr Lys Gln Glu Lys Gln Asp Ile Leu Lys Glu His Asn Asp Phe Arg
 35 40 45

Xaa Xaa Ala Arg Gly Leu Glu Thr Arg Gly Asn Pro Gly Pro Gln Pro
 50 55 60

Pro Ala Lys Asn Met Lys Asn Leu Val Trp Asp Glu Leu Ala Tyr Thr
 65 70 75 80

Ala Gln Val Trp Ala Asn Gln Cys Gln Tyr Gly His Asp Thr Cys Arg
 85 90 95

Asp Val Ala Lys Tyr Val Gly Gln Asn Val Ala Leu Thr Gly Ser Thr
 100 105 110

Ala Ala Lys Tyr Asp Pro Xaa Xaa Leu Val Lys Met Trp Glu Asp Glu
 115 120 125

Val Lys Asp Tyr Asn Pro Lys Lys Lys Phe Ser Asn Phe Leu Lys Gly
 130 135 140

His Tyr Thr Gln Met Val Trp Ala Asn Thr Lys Glu Val Gly Cys Gly
 145 150 155 160

Ser Ile Lys Tyr Ile Gln Xaa Lys Trp His Lys His Tyr Leu Val Cys
 165 170 175

Asn Tyr Gly Pro Ser Gly Asn Phe Asn Glu Glu Leu Xaa Xaa Thr Lys
 180 185 190

<210> 123
 <211> 170
 <212> PRT
 <213> Vesputa

<220>
 <221> MISC_FEATURE
 <222> (1)..(170)
 <223> where X is any amino acid

<400> 123

Asn Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala Cys
 1 5 10 15

Lys Tyr Gly Thr Ser Lys Pro Asn Cys Gly Val Val Tyr Gly Leu Thr
 20 25 30

Glu Lys Gln Thr Ile Leu Lys His Asn Asp Phe Arg Xaa Xaa Ala Xaa
 35 40 45

Gly Leu Glu Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys Asn
 50 55 60

Met Asn Leu Val Trp Asn Asp Glu Leu Ala Xaa Ala Gln Val Trp Ala
 65 70 75 80

Gln Cys Asn Gln Tyr Gly His Asp Thr Cys Lys Asp Lys Tyr Val Gly
 85 90 95

Gln Asn Ile Ala Ile Thr Ala Ala Xaa Asp Pro Xaa Xaa Leu Val Lys
100 105 110

Met Trp Glu Glu Val Lys Asp Phe Asn Pro Trp Ser Asn Lys Thr Gly
115 120 125

His Tyr Thr Gln Met Val Trp Ala Thr Lys Glu Thr Gly Cys Gly Ser
130 135 140

Xaa Lys Tyr Val Asp Trp His Tyr Leu Val Cys Asn Tyr Gly Pro Ser
145 150 155 160

Gly Asn Phe Asn Glu Leu Tyr Xaa Thr Lys
165 170

<210> 124

<211> 166

<212> PRT

<213> Vesputia

<220>

<221> MISC_FEATURE

<222> (1)..(166)

<223> where X is any amino acid

<400> 124

Tyr Cys Lys Ile Lys Cys Leu Lys Gly Gly Val His Thr Ala Cys Lys
1 5 10 15

Tyr Gly Thr Ser Lys Pro Asn Cys Gly Asn Val Val Ser Tyr Gly Val
20 25 30

Thr Glu Lys Gln Phe Ile Leu Lys His Asn Asp Phe Arg Xaa Xaa Ala
35 40 45

Arg Gly Leu Glu Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys
50 55 60

Asn Met Asn Leu Val Trp Asn Glu Leu Ala Ile Ala Gln Thr Trp Ala
65 70 75 80

Gln Cys Tyr Gly His Asp Thr Cys Lys Asp Lys Tyr Asn Val Gly Gln
85 90 95

Asn Ile Ala Val Xaa Gly Ser Thr Ala Ala Tyr Thr Leu Val Lys Trp
100 105 110

Glu Glu Val Lys Asp Xaa Asn Pro Trp Gly Asn Xaa Xaa Lys Gly His
115 120 125

Tyr Thr Gln Met Val Trp Ala Thr Lys Glu Ile Gly Cys Gly Ser Ile
130 135 140

Lys Tyr Val Trp His Tyr Leu Val Cys Asn Tyr Gly Pro Gly Asn Phe
145 150 155 160

Asn Glu Val Xaa Xaa Lys
165

<210> 125
<211> 156
<212> PRT
<213> Vespula

<220>
<221> MISC_FEATURE
<222> (1)..(156)
<223> where X is any amino acid

<400> 125

Asn Asn Tyr Cys Lys Ile Lys Cys Xaa Gly Thr His Thr Cys Lys Tyr
1 5 10 15

Gly Thr Ser Lys Pro Asn Cys Gly Val Val Gly Leu Thr Lys Gln Glu
20 25 30

Phe Ile Leu Lys His Asn Phe Phe Arg Xaa Xaa Ala Arg Gly Leu Glu
35 40 45

Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys Met Leu Val Trp
50 55 60

Asn Asp Glu Leu Ala Ile Ala Gln Val Trp Ala Asn Asn Cys Gln Tyr
65 70 75 80

Gly His Asp Cys Arg Ala Lys Tyr Val Gly Gln Asn Ile Ala Ile Thr
85 90 95

Ala Xaa Xaa Xaa Xaa Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr
100 105 110

Gln Asn Lys Gly His Tyr Thr Gln Met Val Trp Ala Thr Lys Glu Ile
115 120 125

Gly Cys Gly Ser Ile Lys Tyr Ile Trp His Lys His Tyr Leu Val Cys
130 135 140

Asn Tyr Gly Pro Gly Asn Asn Glu Leu Xaa Xaa Lys
145 150 155

<210> 126

<211> 155

<212> PRT

<213> Vespula

<220>

<221> MISC_FEATURE

<222> (1)..(155)

<223> where X is any amino acid

<400> 126

Asn Asn Tyr Cys Lys Ile Lys Cys Lys Gly Ile His Thr Cys Lys Tyr
1 5 10 15

Gly Thr Ser Lys Pro Asn Cys Gly Val Val Gly Leu Thr Lys Gln Glu
20 25 30

Glu Ile Leu Lys His Asn Xaa Phe Arg Xaa Xaa Ala Arg Gly Leu Glu
35 40 45

Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys Met Leu Val Trp
50 55 60

Asn Asp Glu Leu Ala Ile Ala Gln Val Trp Ala Asn Gln Cys Asn Tyr
65 70 75 80

Gly His Asp Cys Arg Ala Lys Tyr Val Gly Gln Asn Ile Ala Thr Ser
85 90 95

Ala Xaa Xaa Xaa Xaa Val Lys Met Trp Glu Asp Glu Val Lys Asp Tyr
100 105 110

Gln Asn Lys Gly His Tyr Thr Gln Met Val Trp Ala Thr Lys Glu Ile
 115 120 125

Gly Cys Gly Ser Tyr Ile Asp Trp His Arg His Tyr Leu Val Cys Asn
 130 135 140

Tyr Gly Pro Gly Asn Asn Glu Ile Xaa Xaa Lys
 145 150 155

<210> 127
 <211> 41
 <212> DNA
 <213> *Vespula vulgaris*

<400> 127
 accacagcct ccagcgaaga atatgaaaaa tttggtatgg a 41

<210> 128
 <211> 41
 <212> DNA
 <213> *Vespula vulgaris*

<400> 128
 tccataccaa atttttcata ttcttcgctg gaggctgtgg t 41

<210> 129
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Ves v 5 mutant 1 sense primer

<400> 129
 ccagcggcta atatgaaaaa t 21

<210> 130
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Ves v 5 mutant 1 non-sense primer

<400> 130
 catattcttc gctggaggct g 21

<210> 131

<211> 41
 <212> DNA
 <213> *Vespula vulgaris*

 <400> 131
 ggctaatacaa tgtcaatatg gtcacgatac ttgcagggat g 41

 <210> 132
 <211> 41
 <212> DNA
 <213> *Vespula vulgaris*

 <400> 132
 catccctgca agtatcgtga ccatattgac attgattagc c 41

 <210> 133
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Ves v 5 mutant 2 sense primer

 <400> 133
 tgtcaatatg gtcacgatac t 21

 <210> 134
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Ves v 5 mutant 2 non-sense primer

 <400> 134
 gtgaccatat tgacattgat t 21

 <210> 135
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer

 <400> 135
 attcatcagc tgcgagatag g 21

 <210> 136
 <211> 615
 <212> DNA
 <213> *Vespula vulgaris*

<400> 136
aacaattatt gtaaaataaa atgtttgaaa ggaggtgtcc atactgcctg caaatatgga 60
agtcttaaac cgaattgcgg taataaggta gtggtatcct atggtctaac gaaacaagag 120
aaacaagaca tcttaaagga gcacaatgac tttagacaaa aaattgcacg aggattggag 180
actagaggta atcctggacc acagcctcca gcgaagaata tgaaaaattt ggtatggaac 240
gacgagttag cttatgtcgc ccaagtgtgg gctaatacat gtcaatatgg tcacgatact 300
tgcaggggatg tagcaaaaata tcaggttgga caaacgtag ccttaacagg tagcacggct 360
gctaaatacg atgatccagt taaactagtt aaaatgtggg aagatgaagt gaaagattat 420
aatcctaaga aaaagttttc gggaaacgac tttctgaaaa ccggccatta cactcaaagt 480
gtttgggcta acaccaagga agttggttgt ggaagtataa aatacattca agagaaatgg 540
caciaaacatt accttgtatg taattatgga ccagcggaa actttaagaa tgaggaactt 600
tatcaaaca agtaa 615

<210> 137
<211> 591
<212> DNA
<213> Dermatophagoides pteronyssinus

<400> 137
cacaaattct tctttcttcc ttactactga tcattaatct gaaaacaaaa ccaaacaac 60
cattcaaat gatgtacaaa attttgtgtc tttcattgtt ggtcgcagcc gttgctcgtg 120
atcaagtcga tgtcaaagat tgtgccaatc atgaaatcaa aaaagttttg gtaccaggat 180
gccatggttc agaaccatgt atcattcatc gtggtaaacc attccaattg gaagccgttt 240
tcgaagccaa ccaaacaca aaaacggcta aaattgaaat caaagcctca atcgatggtt 300
tagaagttga tgttcccggt atcgatccaa atgcatgcca ttacatgaaa tgccattgg 360
ttaaaggaca acaatatgat attaaatata catggaatgt tccgaaaatt gcacaaaaat 420
ctgaaaatgt tgtcgtcact gttaaagtta tgggtgatga tgggtgtttg gcctgtgcta 480
ttgctactca tgctaaaatc cgcgattaaa tcaaacaaaa tttattgatt ttgtaatcac 540
aatgattga ttttctttcc aaaaaaaaaa taaataaaat tttggaatt c 591

<210> 138
<211> 146
<212> PRT
<213> Dermatophagoides pteronyssinus

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<300>
<308> GenBank / P49278
<309> 1996-02-01
<313> (1) .. (146)

<400> 138

Met Met Tyr Lys Ile Leu Cys Leu Ser Leu Leu Val Ala Ala Val Ala
1          5          10          15

Arg Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys
          20          25          30

Val Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg
          35          40          45

Gly Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr
          50          55          60

Lys Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val
65          70          75          80

Asp Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro
          85          90          95

Leu Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro
          100          105          110

Lys Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met
          115          120          125

Gly Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile
          130          135          140

Arg Asp
145

<210> 139
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 139
cagactaatt cgagctcggt accc

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<210> 140	
<211> 23	
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<220>	
<223> primer	
<400> 140	
tttcctgaaa tgttttcaac act	23
<210> 141	
<211> 23	
<212> DNA	
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<220>	
<223> primer	
<400> 141	
aacatttcag gaaatggagg gcc	23
<210> 142	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> primer	
<400> 142	
cacgtagttg aaagggaggc cttc	24
<210> 143	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
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<223> primer	
<400> 143	
tttcaactac gtgaaggaca gagt	24
<210> 144	
<211> 24	
<212> DNA	
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<220>	
<223> primer	

<400> 144	
ggagatgctc tccaatgtgt cgcc	24
<210> 145	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
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<223> primer	
<400> 145	
ggagagcatc tccaacgaga taaa	24
<210> 146	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> primer	
<400> 146	
acttgcttca acctgctctg cctt	24
<210> 147	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> primer	
<400> 147	
caggttgaag caagtaaaga aatg	24
<210> 148	
<211> 24	
<212> DNA	
<213> Artificial Sequence	
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<223> primer	
<400> 148	
gcaggtcgac tctagaggat ccat	24
<210> 149	
<211> 24	
<212> DNA	
<213> Artificial Sequence	

<220>
 <223> primer

 <400> 149
 cagactaatt cgacgtcggc accc 24

 <210> 150
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer

 <400> 150
 cagtcgcggc gctgggataa caga 24

 <210> 151
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer

 <400> 151
 ccagcaccgc gactgttcaa ggcc 24

 <210> 152
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer

 <400> 152
 cactatgggtt atctcggttg agat 24

 <210> 153
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer

 <400> 153
 gagataacca tagtggcaac tggt 24

 <210> 154

<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 154
ttactgaatt cattagttgt aggcattccgg gtggcctttg aggta

45

<210> 155
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 155
ccgctcgaga aaagagatca agtcgatgtc gccgattgtg cc

42

<210> 156
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 156
cgttctagac tattaatcgc ggattttagc atgagttgc

39

<210> 157
<211> 67
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 157
ccgctcgaga aaagagatca agtcgatgtc aaagattgtg ccaaccatga aatcaaagaa

60

gtttttgg

67

<210> 158
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 158
 cgttctagac tattaatcgc ggatttttagc atgagttgc 39

<210> 159
 <211> 54
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

<400> 159
 cggggtacca ggatgtcatg gttcagaacc atgtatcatt aaccgtggta aacc 54

<210> 160
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> sense primer

<400> 160
 ggcgattaag ttgggtaacg ccaggg 26

<210> 161
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

<400> 161
 goctcaatcg atggtttatc agttgatgtt ccc 33

<210> 162
 <211> 33
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

<400> 162
 gggaacatca actgataaac catcgattga ggc 33

<210> 163
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

 <400> 163
 catggcatgc aattacatga aatgccatt gg 32

<210> 164
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> anti-sense primer

 <400> 164
 ggaaacagct atgacatga ttacgcc 27

<210> 165
 <211> 50
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> primer

 <400> 165
 ctacgcatgc cattacatga aatgccatt ggttaatgga caacaatatg 50

<210> 166
 <211> 46
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> OB27 sense primer

 <400> 166
 ggaattcctc gagaaaagag atcaagtcga tgtcaaagat tgtgcc 46

<210> 167
 <211> 129
 <212> PRT
 <213> Dermatophagoides pteronyssinus

 <400> 167

 Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
 1 5 10 15

 Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
 20 25 30

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Val Lys Cys Pro Leu
65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
100 105 110

Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

<210> 168

<211> 129

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 168

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Lys
35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys

85

90

95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
 100 105 110

Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
 115 120 125

Asp

<210> 169

<211> 129

<212> PRT

<213> Dermatophagoides pteronyssinus

<400> 169

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
 1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
 20 25 30

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Ser Lys
 35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
 50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
 65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Ile Gly
 100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
 115 120 125

Asp

<210> 170
 <211> 129
 <212> PRT
 <213> Dermatophagoides pteronyssinus

<400> 170

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
 1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
 20 25 30

Lys Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Ser Lys
 35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
 50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
 65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
 100 105 110

Asp Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
 115 120 125

Asp

<210> 171
 <211> 129
 <212> PRT
 <213> Dermatophagoides pteronyssinus

<400> 171

Asp Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
 1 5 10 15

Leu Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly
 20 25 30

Lys Pro Phe Gln Leu Glu Ala Leu Phe Glu Ala Asn Gln Asn Ser Lys
 35 40 45

Thr Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp
 50 55 60

Val Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu
 65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly
 100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
 115 120 125

Asp

<210> 172
 <211> 128
 <212> PRT
 <213> Dermatophagoides pteronyssinus

<400> 172

Gln Val Asp Val Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val Leu
 1 5 10 15

Val Pro Gly Cys His Gly Ser Glu Pro Cys Ile Ile His Arg Gly Lys
 20 25 30

Pro Phe Gln Leu Glu Ala Val Phe Glu Ala Asn Gln Asn Thr Lys Thr
 35 40 45

Ala Lys Ile Glu Ile Lys Ala Ser Ile Asp Gly Leu Glu Val Asp Val
 50 55 60

Pro Gly Ile Asp Pro Asn Ala Cys His Tyr Met Lys Cys Pro Leu Val
 65 70 75 80

Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys Ile
 85 90 95

Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Val Met Gly Asp
 100 105 110

Asp Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg Asp
 115 120 125

<210> 173
 <211> 146
 <212> PRT
 <213> Dermatophagoides farinae

<400> 173

Met Ile Ser Lys Ile Leu Cys Leu Ser Leu Leu Val Ala Ala Val Val
 1 5 10 15

Ala Asp Gln Val Asp Val Lys Asp Cys Ala Asn Asn Glu Ile Lys Lys
 20 25 30

Val Met Val Asp Gly Cys His Gly Ser Asp Pro Cys Ile Ile His Arg
 35 40 45

Gly Lys Pro Phe Thr Leu Glu Ala Leu Phe Asp Ala Asn Gln Asn Thr
 50 55 60

Lys Thr Ala Lys Ile Glu Ile Lys Ala Ser Leu Asp Gly Leu Glu Ile
 65 70 75 80

Asp Val Pro Gly Ile Asp Thr Asn Ala Cys His Phe Met Lys Cys Pro
 85 90 95

Leu Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro
 100 105 110

Lys Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Leu Ile
 115 120 125

Gly Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile
 130 135 140

Arg Asp
 145

<210> 174
 <211> 138
 <212> PRT
 <213> Dermatophagoides farinae

<400> 174

Ser Leu Leu Val Ala Ala Val Val Ala Asp Gln Val Asp Val Lys Asp
 1 5 10 15

Cys Ala Asn Asn Glu Ile Lys Lys Val Met Val Asp Gly Cys His Gly
 20 25 30

Ser Asp Pro Cys Ile Ile His Arg Gly Lys Pro Phe Thr Leu Glu Ala
 35 40 45

Leu Phe Asp Ala Asn Gln Asn Ser Thr Thr Ala Lys Ile Glu Ile Lys
 50 55 60

Ala Ser Leu Asp Gly Leu Glu Ile Asp Val Pro Gly Ile Asp Thr Asn
 65 70 75 80

Ala Cys His Phe Met Lys Cys Pro Leu Val Lys Gly Gln Gln Tyr Asp
 85 90 95

Ala Lys Tyr Thr Trp Asn Val Pro Lys Ile Ala Pro Lys Ser Glu Asn
 100 105 110

Val Val Val Thr Val Lys Leu Val Gly Asp Asn Gly Val Leu Ala Cys
 115 120 125

Ala Ile Ala Thr His Ala Lys Ile Arg Asp
 130 135

<210> 175
 <211> 129
 <212> PRT
 <213> Dermatophagoides farinae

<400> 175

Asp Gln Val Asp Val Lys Asp Cys Ala Asn Asn Glu Ile Lys Lys Val
 1 5 10 15

Met Val Asp Gly Cys His Gly Ser Asp Pro Cys Ile Ile His Arg Gly

20 25 30
 Lys Pro Phe Thr Leu Glu Ala Leu Phe Asp Ala Asn Gln Asn Thr Lys
 35 40 45
 Thr Ala Lys Ile Glu Ile Lys Ala Ser Leu Asp Gly Leu Glu Ile Asp
 50 55 60
 Val Pro Gly Ile Asp Thr Asn Ala Cys His Phe Val Lys Cys Pro Leu
 65 70 75 80
 Val Lys Gly Gln Gln Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Lys
 85 90 95
 Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Leu Ile Gly
 100 105 110
 Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
 115 120 125

Asp

<210> 176
 <211> 129
 <212> PRT
 <213> Dermatophagoides farinae

<400> 176

Asp Gln Val Asp Val Lys Asp Cys Ala Asn Asn Glu Ile Lys Lys Val
 1 5 10 15
 Met Val Asp Gly Cys His Gly Ser Asp Pro Cys Ile Ile His Arg Gly
 20 25 30
 Lys Pro Phe Thr Leu Glu Ala Leu Phe Asp Ala Asn Gln Asn Thr Lys
 35 40 45
 Thr Ala Lys Ile Glu Ile Lys Ala Ser Leu Asp Gly Leu Glu Ile Asp
 50 55 60
 Val Pro Gly Ile Asp Thr Asn Ala Cys His Phe Met Lys Cys Pro Leu
 65 70 75 80

Val Lys Gly Gln Gln Tyr Asp Ala Lys Tyr Thr Trp Asn Val Pro Lys
85 90 95

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Leu Val Gly
100 105 110

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg
115 120 125

Asp

<210> 177
<211> 145
<212> PRT
<213> Euroglyphus maynei

<400> 177

Met Tyr Lys Ile Leu Cys Leu Ser Leu Leu Val Ala Ala Val Ala Ala
1 5 10 15

Asp Gln Val Asp Ile Lys Asp Cys Ala Asn His Glu Ile Lys Lys Val
20 25 30

Met Val Pro Gly Cys Lys Gly Ser Glu Pro Cys Val Ile His Arg Gly
35 40 45

Thr Ala Phe Gln Leu Glu Ala Val Phe Asp Ala Asn Gln Asn Ser Asn
50 55 60

Ala Ala Lys Ile Glu Ile Lys Ala Thr Ile Asp Gly Val Glu Ile Asp
65 70 75 80

Val Pro Gly Ile Asp Asn Asn Leu Cys His Phe Met Lys Cys Pro Leu
85 90 95

Val Lys Gly Gln Glu Tyr Asp Ile Lys Tyr Thr Trp Asn Val Pro Arg
100 105 110

Ile Ala Pro Lys Ser Glu Asn Val Val Val Thr Val Lys Leu Leu Gly
115 120 125

Asp Asn Gly Val Leu Ala Cys Ala Ile Ala Thr His Ala Lys Ile Arg

130

135

140

Asp
145

<210> 178
<211> 135
<212> PRT
<213> Euroglyphus maynei

<400> 178

Val Ala Ala Val Ala Ala Asp Gln Val Asp Val Lys Asp Cys Ala Asn
1 5 10 15

His Glu Ile Lys Lys Val Met Val Pro Gly Cys Lys Gly Ser Glu Pro
20 25 30

Cys Val Ile His Arg Gly Thr Ala Phe Gln Leu Glu Ala Val Phe Asp
35 40 45

Ala Asn Gln Asn Ser Asn Ala Ala Lys Ile Glu Ile Lys Ala Thr Ile
50 55 60

Asp Gly Val Glu Ile Asp Val Pro Gly Ile Asp Asn Asn Leu Cys His
65 70 75 80

Phe Met Lys Cys Pro Leu Val Lys Gly Gln Glu Tyr Asp Ile Lys Tyr
85 90 95

Thr Trp Asn Val Pro Arg Ile Ala Pro Lys Ser Glu Asn Val Val Val
100 105 110

Thr Val Lys Leu Leu Gly Asp Asn Gly Val Leu Ala Cys Ala Ile Ala
115 120 125

Thr His Ala Lys Ile Arg Asp
130 135

<210> 179
<211> 320
<212> PRT
<213> Dermatophagoides pteronyssinus

<400> 179

Met Lys Ile Val Leu Ala Ile Ala Ser Leu Leu Ala Leu Ser Ala Val
 1 5 10 15
 Tyr Ala Arg Pro Ser Ser Ile Lys Thr Phe Glu Glu Tyr Lys Lys Ala
 20 25 30
 Phe Asn Lys Ser Tyr Ala Thr Phe Glu Asp Glu Glu Ala Ala Arg Lys
 35 40 45
 Asn Phe Leu Glu Ser Val Lys Tyr Val Gln Ser Asn Gly Gly Ala Ile
 50 55 60
 Asn His Leu Ser Asp Leu Ser Leu Asp Glu Phe Lys Asn Arg Phe Leu
 65 70 75 80
 Met Ser Ala Glu Ala Phe Glu His Leu Lys Thr Gln Phe Asp Leu Asn
 85 90 95
 Ala Glu Thr Asn Ala Cys Ser Ile Asn Gly Asn Ala Pro Ala Glu Ile
 100 105 110
 Asp Leu Arg Gln Met Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly
 115 120 125
 Cys Gly Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala
 130 135 140
 Tyr Leu Ala Tyr Arg Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu
 145 150 155 160
 Val Asp Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg
 165 170 175
 Gly Ile Glu Tyr Ile Gln His Asn Gly Val Val Gln Glu Ser Tyr Tyr
 180 185 190
 Arg Tyr Val Ala Arg Glu Gln Ser Cys Arg Arg Pro Asn Ala Gln Arg
 195 200 205
 Phe Gly Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asn Val Asn Lys
 210 215 220
 Ile Arg Glu Ala Leu Ala Gln Thr His Ser Ala Ile Ala Val Ile Ile

225 230 235 240
 Gly Ile Lys Asp Leu Asp Ala Phe Arg His Tyr Asp Gly Arg Thr Ile
 245 250 255
 Ile Gln Arg Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile
 260 265 270
 Val Gly Tyr Ser Asn Ala Gln Gly Val Asp Tyr Trp Ile Val Arg Asn
 275 280 285
 Ser Trp Asp Thr Asn Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala
 290 295 300
 Asn Ile Asp Leu Met Met Ile Glu Glu Tyr Pro Tyr Val Val Ile Leu
 305 310 315 320

 <210> 180
 <211> 321
 <212> PRT
 <213> Euroglyphus maynei

 <400> 180
 Met Lys Ile Ile Leu Ala Ile Ala Ser Leu Leu Val Leu Ser Ala Val
 1 5 10 15
 Tyr Ala Arg Pro Ala Ser Ile Lys Thr Phe Glu Glu Phe Lys Lys Ala
 20 25 30
 Phe Asn Lys Thr Tyr Ala Thr Pro Glu Lys Glu Glu Val Ala Arg Lys
 35 40 45
 Asn Phe Leu Glu Ser Leu Lys Tyr Val Glu Ser Asn Lys Gly Ala Ile
 50 55 60
 Asn His Leu Ser Asp Leu Ser Leu Asp Glu Phe Lys Asn Gln Phe Leu
 65 70 75 80
 Met Asn Ala Asn Ala Phe Glu Gln Leu Lys Thr Gln Phe Asp Leu Asn
 85 90 95
 Ala Glu Thr Tyr Ala Cys Ser Ile Asn Ser Val Ser Leu Pro Ser Glu
 100 105 110

Leu Asp Leu Arg Ser Leu Arg Thr Val Thr Pro Ile Arg Met Gln Gly
 115 120 125

Gly Cys Gly Ser Cys Trp Ala Phe Ser Gly Val Ala Ser Thr Glu Ser
 130 135 140

Ala Tyr Leu Ala Tyr Arg Asn Met Ser Leu Asp Leu Ala Glu Gln Glu
 145 150 155 160

Leu Val Asp Cys Ala Ser Gln Asn Gly Cys His Gly Asp Thr Ile Pro
 165 170 175

Arg Gly Ile Glu Tyr Ile Gln Gln Asn Gly Val Val Gln Glu His Tyr
 180 185 190

Tyr Pro Tyr Val Ala Arg Glu Gln Ser Cys His Arg Pro Asn Ala Gln
 195 200 205

Arg Tyr Gly Leu Lys Asn Tyr Cys Gln Ile Ser Pro Pro Asp Ser Asn
 210 215 220

Lys Ile Arg Gln Ala Leu Thr Gln Thr His Thr Ala Val Ala Val Ile
 225 230 235 240

Ile Gly Ile Lys Asp Leu Asn Ala Phe Arg His Tyr Asp Gly Arg Thr
 245 250 255

Ile Met Gln His Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn
 260 265 270

Ile Val Gly Tyr Gly Asn Thr Gln Gly Val Asp Tyr Trp Ile Val Arg
 275 280 285

Asn Ser Trp Asp Thr Thr Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala
 290 295 300

Ala Asn Ile Asn Leu Met Met Ile Glu Gln Tyr Pro Tyr Val Val Met
 305 310 315 320

Leu

<210> 181
 <211> 246
 <212> PRT
 <213> Euroglyphus maynei

<400> 181

Lys Asn Gln Phe Leu Met Asn Ala Asn Ala Phe Glu Gln Leu Lys Thr
 1 5 10 15

Gln Phe Asp Leu Asn Ala Glu Thr Tyr Ala Cys Ser Ile Asn Ser Val
 20 25 30

Ser Leu Pro Ser Glu Leu Asp Leu Arg Ser Leu Arg Thr Val Thr Pro
 35 40 45

Ile Arg Met Gln Gly Gly Cys Gly Ser Cys Trp Ala Phe Ser Gly Val
 50 55 60

Ala Ser Thr Glu Ser Ala Tyr Leu Ala Tyr Arg Asn Met Ser Leu Asp
 65 70 75 80

Leu Ala Glu Gln Glu Leu Val Asp Cys Ala Ser Gln Asn Gly Cys His
 85 90 95

Gly Asp Thr Ile Pro Arg Gly Ile Glu Tyr Ile Gln Gln Asn Gly Val
 100 105 110

Val Gln Glu His Tyr Tyr Pro Tyr Val Ala Arg Glu Gln Ser Cys His
 115 120 125

Arg Pro Asn Ala Gln Arg Tyr Gly Leu Lys Asn Tyr Cys Gln Ile Ser
 130 135 140

Pro Pro Asp Ser Asn Lys Ile Arg Gln Ala Leu Thr Gln Thr His Thr
 145 150 155 160

Ala Val Ala Val Ile Ile Gly Ile Lys Asp Leu Asn Ala Phe Arg His
 165 170 175

Tyr Asp Gly Arg Thr Ile Met Gln His Asp Asn Gly Tyr Gln Pro Asn
 180 185 190

Tyr His Ala Val Asn Ile Val Gly Tyr Gly Asn Thr Gln Gly Val Asp
 195 200 205

Tyr Trp Ile Val Arg Asn Ser Trp Asp Thr Thr Trp Gly Asp Asn Gly
 210 215 220

Tyr Gly Tyr Phe Ala Ala Asn Ile Asn Leu Met Met Ile Glu Gln Tyr
 225 230 235 240

Pro Tyr Val Val Met Leu
 245

<210> 182
 <211> 327
 <212> PRT
 <213> Euroglyphus maynei

<400> 182

Lys His Leu Ser Thr Ile Met Lys Ile Ile Leu Ala Ile Ala Ser Leu
 1 5 10 15

Leu Val Leu Ser Ala Val Tyr Ala Arg Pro Ala Ser Ile Lys Thr Phe
 20 25 30

Glu Glu Phe Lys Lys Ala Phe Asn Lys Ser Tyr Ala Thr Pro Glu Lys
 35 40 45

Glu Glu Val Ala Arg Lys Asn Phe Leu Glu Ser Leu Lys Tyr Val Glu
 50 55 60

Ser Asn Lys Gly Ala Ile Asn His Leu Ser Asp Leu Ser Leu Asp Glu
 65 70 75 80

Phe Lys Asn Gln Phe Leu Met Asn Ala Asn Ala Phe Glu Gln Leu Lys
 85 90 95

Thr Gln Phe Asp Leu Asn Ala Glu Thr Tyr Ala Cys Ser Ile Asn Ser
 100 105 110

Val Ser Leu Pro Ser Glu Leu Asp Leu Arg Ser Leu Arg Thr Val Thr
 115 120 125

Pro Ile Arg Met Gln Gly Gly Cys Gly Ser Cys Trp Ala Phe Ser Gly
 130 135 140

Val Ala Ser Thr Glu Ser Ala Tyr Leu Ala Tyr Arg Asn Met Ser Leu
 145 150 155 160

Asp Leu Ala Glu Gln Glu Leu Val Asp Cys Ala Ser Gln Asn Gly Cys
 165 170 175

His Gly Asp Thr Ile Pro Arg Gly Ile Glu Tyr Ile Gln Gln Asn Gly
 180 185 190

Val Val Gln Glu His Tyr Tyr Pro Tyr Val Ala Arg Glu Gln Ser Cys
 195 200 205

His Arg Pro Asn Ala Gln Arg Tyr Gly Leu Lys Asn Tyr Cys Gln Ile
 210 215 220

Ser Pro Pro Asp Ser Asn Lys Ile Arg Gln Ala Leu Thr Gln Thr His
 225 230 235 240

Thr Ala Val Ala Val Ile Ile Gly Ile Lys Asp Leu Asn Ala Phe Arg
 245 250 255

His Tyr Asp Gly Arg Thr Ile Met Gln His Asp Asn Gly Tyr Gln Pro
 260 265 270

Asn Tyr His Ala Val Asn Ile Val Gly Tyr Gly Asn Thr Gln Gly Val
 275 280 285

Asp Tyr Trp Ile Val Arg Asn Ser Trp Asp Thr Thr Trp Gly Asp Asn
 290 295 300

Gly Tyr Gly Tyr Phe Ala Ala Asn Ile Asn Leu Met Met Ile Glu Gln
 305 310 315 320

Tyr Pro Tyr Val Val Ile Leu
 325

<210> 183
 <211> 321
 <212> PRT
 <213> Dermatophagoides farinae

<400> 183

Met Lys Phe Val Leu Ala Ile Ala Ser Leu Leu Ala Leu Ser Thr Val
 1 5 10 15

Tyr Ala Arg Pro Ala Ser Ile Lys Thr Phe Glu Glu Phe Lys Lys Ala
 20 25 30

Phe Asn Lys Asn Tyr Ala Thr Val Glu Glu Glu Glu Val Ala Arg Lys
 35 40 45

Asn Phe Leu Glu Ser Leu Lys Tyr Val Glu Ala Asn Lys Gly Ala Ile
 50 55 60

Asn His Leu Ser Asp Leu Ser Leu Asp Glu Phe Lys Asn Arg Phe Leu
 65 70 75 80

Met Ser Ala Glu Ala Phe Glu Gln Leu Lys Thr Gln Phe Asp Leu Asn
 85 90 95

Ala Glu Thr Ser Ala Cys Arg Ile Asn Ser Val Asn Val Pro Ser Glu
 100 105 110

Leu Asp Leu Arg Ser Leu Arg Thr Val Thr Pro Ile Arg Met Gln Gly
 115 120 125

Gly Cys Gly Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser
 130 135 140

Ala Tyr Leu Ala Tyr Arg Asn Thr Ser Leu Asp Leu Ser Glu Gln Glu
 145 150 155 160

Leu Val Asp Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro
 165 170 175

Arg Gly Ile Glu Tyr Ile Gln Gln Asn Gly Val Val Glu Glu Arg Ser
 180 185 190

Tyr Pro Tyr Val Ala Arg Glu Gln Arg Cys Arg Arg Pro Asn Ser Gln
 195 200 205

His Tyr Gly Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asp Val Lys
 210 215 220

Gln Ile Arg Glu Ala Leu Thr Gln Thr His Thr Ala Ile Ala Val Ile
 225 230 235 240

Ile Gly Ile Lys Asp Leu Arg Ala Phe Gln His Tyr Asp Gly Arg Thr
245 250 255

Ile Ile Gln His Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn
260 265 270

Ile Val Gly Tyr Gly Ser Thr Gln Gly Asp Asp Tyr Trp Ile Val Arg
275 280 285

Asn Ser Trp Asp Thr Thr Trp Gly Asp Ser Gly Tyr Gly Tyr Phe Gln
290 295 300

Ala Gly Asn Asn Leu Met Met Ile Glu Gln Tyr Pro Tyr Val Val Ile
305 310 315 320

Met

<210> 184

<211> 211

<212> PRT

<213> Euroglyphus maynei

<400> 184

Thr Tyr Ala Cys Ser Ile Asn Ser Val Ser Leu Pro Ser Glu Leu Asp
1 5 10 15

Leu Arg Ser Leu Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys
20 25 30

Gly Ser Cys Trp Ala Phe Ser Gly Val Ala Ser Thr Glu Ser Ala Tyr
35 40 45

Leu Ala Tyr Arg Asn Met Ser Leu Asp Leu Ala Glu Gln Glu Leu Val
50 55 60

Asp Cys Ala Ser Gln Asn Gly Cys His Gly Asp Thr Ile Pro Arg Gly
65 70 75 80

Ile Glu Tyr Ile Gln Gln Asn Gly Val Val Gln Glu His Tyr Tyr Pro
85 90 95

Tyr Val Ala Arg Glu Gln Ser Cys His Arg Pro Asn Ala Gln Arg Tyr

100	105	110
Gly Leu Lys Asn Tyr Cys Gln Ile Ser Pro Pro Asp Ser Asn Lys Ile		
115	120	125
Arg Gln Ala Leu Thr Gln Thr His Thr Ala Val Ala Val Ile Ile Gly		
130	135	140
Ile Lys Asp Leu Asn Ala Phe Arg His Tyr Asp Gly Arg Thr Ile Met		
145	150	155
Gln His Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile Val		
165	170	175
Gly Tyr Gly Asn Thr Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser		
180	185	190
Trp Asp Thr Thr Trp Gly Asp Asn Gly Tyr Gly Tyr Phe Ala Ala Asn		
195	200	205
Ile Asn Leu		
210		
<210> 185		
<211> 210		
<212> PRT		
<213> Dermatophagoides farinae		
<400> 185		
Ser Ala Cys Arg Ile Asn Ser Val Asn Val Pro Ser Glu Leu Asp Leu		
1	5	10
Arg Ser Leu Arg Thr Val Thr Pro Ile Arg Met Gln Gly Gly Cys Gly		
20	25	30
Ser Cys Trp Ala Phe Ser Gly Val Ala Ala Thr Glu Ser Ala Tyr Leu		
35	40	45
Ala Tyr Arg Asn Thr Ser Leu Asp Leu Ser Glu Gln Glu Leu Val Asp		
50	55	60
Cys Ala Ser Gln His Gly Cys His Gly Asp Thr Ile Pro Arg Gly Ile		
65	70	75
		80

Glu Tyr Ile Gln Gln Asn Gly Val Val Glu Glu Arg Ser Tyr Pro Tyr
85 90 95

Val Ala Arg Glu Gln Gln Cys Arg Arg Pro Asn Ser Gln His Tyr Gly
100 105 110

Ile Ser Asn Tyr Cys Gln Ile Tyr Pro Pro Asp Val Lys Gln Ile Arg
115 120 125

Glu Ala Leu Thr Gln Thr His Thr Ala Ile Ala Val Ile Ile Gly Ile
130 135 140

Lys Asp Leu Arg Ala Phe Gln His Tyr Asp Gly Arg Thr Ile Ile Gln
145 150 155 160

His Asp Asn Gly Tyr Gln Pro Asn Tyr His Ala Val Asn Ile Val Gly
165 170 175

Tyr Gly Ser Thr Gln Gly Val Asp Tyr Trp Ile Val Arg Asn Ser Trp
180 185 190

Asp Thr Thr Trp Gly Asp Ser Gly Tyr Gly Tyr Phe Gln Ala Gly Asn
195 200 205

Asn Leu
210

<210> 186
<211> 312
<212> PRT
<213> Phleum pratense

<400> 186

Met Ala Val His Gln Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Gly Ser Tyr Ala Ala Asp Leu Gly Tyr Gly Pro
20 25 30

Ala Thr Pro Ala Ala Pro Ala Ala Gly Tyr Thr Pro Ala Thr Pro Ala
35 40 45

Ala Pro Ala Gly Ala Glu Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln

50	55	60
Lys Leu Ile Glu Lys Ile Asn Ala Gly Phe Lys Ala Ala Leu Ala Ala		
65	70	75 80
Ala Ala Gly Val Pro Pro Ala Asp Lys Tyr Arg Thr Phe Val Ala Thr		
	85	90 95
Phe Gly Ala Ala Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Gly Glu		
	100	105 110
Pro Lys Gly Ala Ala Glu Ser Ser Ser Lys Ala Ala Leu Thr Ser Lys		
	115	120 125
Leu Asp Ala Ala Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr		
	130	135 140
Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Val Ser Glu Ala Leu		
145	150	155 160
Arg Ile Ile Ala Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala		
	165	170 175
Glu Glu Val Lys Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys		
	180	185 190
Val Asp Ala Ala Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro		
	195	200 205
Ala Asn Asp Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Asp Ala Ile		
	210	215 220
Lys Ala Ser Thr Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala		
225	230	235 240
Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala		
	245	250 255
Pro Glu Val Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile		
	260	265 270
Thr Ala Met Ser Glu Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Ala		
	275	280 285

Thr Ala Thr Ala Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr
 290 295 300

Ala Ala Thr Gly Gly Tyr Lys Val
 305 310

<210> 187
 <211> 312
 <212> PRT
 <213> Phleum pratense

<400> 187

Met Ala Val His Gln Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Leu Gly Tyr Gly Pro
 20 25 30

Ala Thr Pro Ala Ala Pro Ala Ala Gly Tyr Thr Pro Ala Thr Pro Ala
 35 40 45

Ala Pro Ala Glu Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln
 50 55 60

Lys Leu Ile Glu Lys Ile Asn Ala Gly Phe Lys Ala Ala Leu Ala Ala
 65 70 75 80

Ala Ala Gly Val Gln Pro Ala Asp Lys Tyr Arg Thr Phe Val Ala Thr
 85 90 95

Phe Gly Ala Ala Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Gly Glu
 100 105 110

Pro Lys Gly Ala Ala Glu Ser Ser Ser Lys Ala Ala Leu Thr Ser Lys
 115 120 125

Leu Asp Ala Ala Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr
 130 135 140

Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu
 145 150 155 160

Arg Ile Ile Ala Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala
 165 170 175
 Glu Glu Val Lys Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys
 180 185 190
 Val Asp Ala Ala Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro
 195 200 205
 Ala Asn Asp Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Asp Ala Ile
 210 215 220
 Lys Ala Ser Thr Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala
 225 230 235 240
 Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala
 245 250 255
 Pro Glu Val Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile
 260 265 270
 Thr Ala Met Ser Glu Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Ala
 275 280 285
 Thr Ala Thr Ala Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr
 290 295 300
 Ala Ala Thr Gly Gly Tyr Lys Val
 305 310
 <210> 188
 <211> 286
 <212> PRT
 <213> Phleum pratense
 <400> 188
 Ala Asp Leu Gly Tyr Gly Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 1 5 10 15
 Tyr Thr Pro Ala Thr Pro Ala Ala Pro Ala Gly Ala Asp Ala Ala Gly
 20 25 30
 Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly
 35 40 45

Phe Lys Ala Ala Leu Ala Gly Ala Gly Val Gln Pro Ala Asp Lys Tyr
 50 55 60

Arg Thr Phe Val Ala Thr Phe Gly Pro Ala Ser Asn Lys Ala Phe Ala
 65 70 75 80

Glu Gly Leu Ser Gly Glu Pro Lys Gly Ala Ala Glu Ser Ser Ser Lys
 85 90 95

Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr Lys
 100 105 110

Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala
 115 120 125

Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val His
 130 135 140

Ala Val Lys Pro Ala Ala Glu Glu Val Lys Val Ile Pro Ala Gly Glu
 145 150 155 160

Leu Gln Val Ile Glu Lys Val Asp Ala Ala Phe Lys Val Ala Ala Thr
 165 170 175

Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Ala
 180 185 190

Ala Phe Asn Asp Glu Ile Lys Ala Ser Thr Gly Gly Ala Tyr Glu Ser
 195 200 205

Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala
 210 215 220

Ala Thr Val Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Phe Glu Thr
 225 230 235 240

Ala Leu Lys Lys Ala Ile Thr Ala Met Ser Glu Ala Gln Lys Ala Ala
 245 250 255

Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Ala Ala Val Gly Ala
 260 265 270

Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly Gly Tyr Lys Val
 275 280 285

<210> 189
 <211> 333
 <212> PRT
 <213> *Poa pratensis*

<400> 189

Met Ala Val His Gln Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Val Gly Tyr Gly Ala
 20 25 30

Pro Ala Thr Leu Ala Thr Pro Ala Thr Pro Ala Ala Pro Ala Ala Gly
 35 40 45

Tyr Thr Pro Ala Ala Pro Ala Gly Ala Ala Pro Lys Ala Thr Thr Asp
 50 55 60

Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly Phe Lys Ala Ala Val
 65 70 75 80

Ala Ala Ala Ala Gly Val Pro Ala Val Asp Lys Tyr Lys Thr Phe Val
 85 90 95

Ala Thr Phe Gly Thr Ala Ser Asn Lys Ala Phe Ala Glu Ala Leu Ser
 100 105 110

Thr Glu Pro Lys Gly Ala Ala Ala Ala Ser Ser Asn Ala Val Leu Thr
 115 120 125

Ser Lys Leu Asp Ala Ala Tyr Lys Leu Ala Tyr Lys Ser Ala Glu Gly
 130 135 140

Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu
 145 150 155 160

Ala Leu Arg Ile Ile Ala Gly Thr Leu Glu Val His Ala Val Lys Pro
 165 170 175

Ala Gly Glu Glu Val Lys Ala Ile Pro Ala Gly Glu Leu Gln Val Ile

180	185	190
Asp Lys Val Asp Ala Ala Phe Lys Val Ala Ala Thr Ala Ala Asn Ala		
195	200	205
Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Asp		
210	215	220
Ala Ile Lys Ala Ser Thr Gly Gly Ala Tyr Gln Ser Tyr Lys Phe Ile		
225	230	235 240
Pro Ala Leu Glu Ala Ala Val Lys Gln Ser Tyr Ala Ala Thr Val Ala		
245	250	255
Thr Ala Pro Ala Val Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys		
260	265	270
Ala Ile Thr Ala Met Ser Gln Ala Gln Lys Ala Ala Lys Pro Ala Ala		
275	280	285
Ala Val Thr Ala Thr Ala Thr Gly Ala Val Gly Ala Ala Thr Gly Ala		
290	295	300
Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Ala Gly Gly Tyr Lys		
305	310	315 320
Thr Gly Ala Ala Thr Pro Thr Ala Gly Gly Tyr Lys Val		
325	330	
<210> 190		
<211> 307		
<212> PRT		
<213> Poa pratensis		
<400> 190		
Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Val Ala Leu Val		
1	5	10 15
Val Gly Pro Ala Ala Ser Tyr Ala Ala Asp Leu Ser Tyr Gly Ala Pro		
20	25	30
Ala Thr Pro Ala Ala Pro Ala Ala Gly Tyr Thr Pro Ala Ala Pro Ala		
35	40	45

Gly Ala Ala Pro Lys Ala Thr Thr Asp Glu Gln Lys Met Ile Glu Lys
 50 55 60

Ile Asn Val Gly Phe Lys Ala Ala Val Ala Ala Gly Gly Val Pro
 65 70 75 80

Ala Ala Asn Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala Ser
 85 90 95

Asn Lys Ala Phe Ala Glu Ala Leu Ser Thr Glu Pro Lys Gly Ala Ala
 100 105 110

Val Asp Ser Ser Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala Tyr
 115 120 125

Lys Leu Ala Tyr Lys Ser Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr
 130 135 140

Asp Asp Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala Gly
 145 150 155 160

Thr Leu Glu Val His Gly Val Lys Pro Ala Ala Glu Glu Val Lys Ala
 165 170 175

Thr Pro Ala Gly Glu Leu Gln Val Ile Asp Lys Val Asp Ala Ala Phe
 180 185 190

Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys Phe
 195 200 205

Thr Val Phe Glu Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser Thr Gly
 210 215 220

Gly Ala Tyr Gln Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val
 225 230 235 240

Lys Gln Ser Tyr Ala Ala Thr Val Ala Thr Ala Pro Ala Val Lys Tyr
 245 250 255

Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser Gln
 260 265 270

Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Ala Thr Gly Thr Ala Thr
 275 280 285

Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Ala Gly Gly
 290 295 300

Tyr Lys Val
 305

<210> 191
 <211> 276
 <212> PRT
 <213> Phleum pratense

<400> 191

Ala Asp Leu Gly Tyr Gly Gly Pro Ala Thr Pro Ala Ala Pro Ala Glu
 1 5 10 15

Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
 20 25 30

Lys Ile Asn Asp Gly Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val
 35 40 45

Pro Pro Ala Asp Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala
 50 55 60

Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Ala Glu Pro Lys Gly Ala
 65 70 75 80

Ala Glu Ser Ser Ser Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala
 85 90 95

Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys
 100 105 110

Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala
 115 120 125

Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala Glu Glu Val Lys
 130 135 140

Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys Val Asp Ser Ala
 145 150 155 160

Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
165 170 175

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Ala Ser Thr
180 185 190

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala
195 200 205

Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys
210 215 220

Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser
225 230 235 240

Glu Ala Gln Lys Ala Ala Lys Pro Ala Thr Glu Ala Thr Ala Thr Ala
245 250 255

Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly
260 265 270

Gly Tyr Lys Val
275

<210> 192
<211> 276
<212> PRT
<213> Phleum pratense

<400> 192

Ala Asp Leu Gly Tyr Gly Gly Pro Ala Thr Pro Ala Ala Pro Ala Glu
1 5 10 15

Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
20 25 30

Lys Ile Asn Asp Gly Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val
35 40 45

Pro Pro Ala Asp Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala
50 55 60

Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Ala Glu Pro Lys Gly Ala
 65 70 75 80

Ala Glu Ser Ser Ser Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala
 85 90 95

Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Lys
 100 105 110

Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala
 115 120 125

Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala Glu Glu Val Lys
 130 135 140

Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys Val Asp Ser Ala
 145 150 155 160

Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
 165 170 175

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Ala Ser Thr
 180 185 190

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala
 195 200 205

Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys
 210 215 220

Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser
 225 230 235 240

Glu Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala
 245 250 255

Thr Ser Ala Val Gly Ala Ala Thr Gly Ala Thr Thr Ala Ala Ala Gly
 260 265 270

Gly Tyr Lys Val
 275

<210> 193

<211> 276
 <212> PRT
 <213> Phleum pratense

<400> 193

Ala	Asp	Leu	Gly	Tyr	Gly	Gly	Pro	Ala	Thr	Pro	Ala	Ala	Pro	Ala	Glu	1	5	10	15
Ala	Ala	Pro	Ala	Gly	Lys	Ala	Thr	Thr	Glu	Glu	Gln	Lys	Leu	Ile	Glu	20	25	30	
Lys	Ile	Asn	Asp	Gly	Phe	Lys	Ala	Ala	Leu	Ala	Ala	Ala	Ala	Gly	Val	35	40	45	
Pro	Pro	Ala	Asp	Lys	Tyr	Lys	Thr	Phe	Val	Ala	Thr	Phe	Gly	Ala	Ala	50	55	60	
Ser	Asn	Lys	Ala	Phe	Ala	Glu	Gly	Leu	Ser	Ala	Glu	Pro	Lys	Gly	Ala	65	70	75	80
Ala	Glu	Ser	Ser	Ser	Lys	Ala	Ala	Leu	Thr	Ser	Lys	Leu	Asp	Ala	Ala	85	90	95	
Tyr	Lys	Leu	Ala	Tyr	Lys	Thr	Ala	Glu	Gly	Ala	Thr	Pro	Glu	Ala	Lys	100	105	110	
Tyr	Asp	Ala	Tyr	Val	Ala	Thr	Leu	Ser	Glu	Ala	Leu	Arg	Ile	Ile	Ala	115	120	125	
Gly	Thr	Leu	Glu	Val	His	Ala	Val	Lys	Pro	Ala	Ala	Glu	Glu	Val	Lys	130	135	140	
Val	Ile	Pro	Ala	Gly	Glu	Leu	Gln	Val	Ile	Glu	Lys	Val	Asp	Ser	Ala	145	150	155	160
Phe	Lys	Val	Ala	Ala	Thr	Ala	Ala	Asn	Ala	Ala	Pro	Ala	Asn	Asp	Lys	165	170	175	
Phe	Thr	Val	Phe	Glu	Ala	Ala	Phe	Asn	Asn	Ala	Ile	Lys	Ala	Ser	Thr	180	185	190	
Gly	Gly	Ala	Tyr	Glu	Ser	Tyr	Lys	Phe	Ile	Pro	Ala	Leu	Glu	Ala	Ala	195	200	205	

Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys
 210 215 220

Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Phe Thr Ala Met Ser
 225 230 235 240

Glu Ala Gln Lys Ala Ala Lys Pro Ala Thr Glu Ala Thr Ala Thr Ala
 245 250 255

Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly
 260 265 270

Gly Tyr Lys Val
 275

<210> 194
 <211> 276
 <212> PRT
 <213> Phleum pratense

<400> 194

Ala Asp Leu Gly Tyr Gly Gly Pro Ala Thr Pro Ala Ala Pro Ala Glu
 1 5 10 15

Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
 20 25 30

Lys Ile Asn Asp Gly Phe Lys Ala Ala Leu Ala Ala Ala Ala Gly Val
 35 40 45

Pro Pro Ala Asp Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala
 50 55 60

Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Ala Glu Pro Lys Gly Ala
 65 70 75 80

Ala Glu Ser Ser Ser Lys Ala Ala Leu Thr Ser Lys Leu Asp Ala Ala
 85 90 95

Tyr Lys Leu Ala Tyr Lys Thr Ala Glu Gly Ala Thr Pro Glu Ala Glu
 100 105 110

Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala

115	120	125
Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala Glu Glu Val Lys		
130	135	140
Val Ile Pro Ala Gly Glu Leu Gln Val Ile Glu Lys Val Asp Ser Ala		
145	150	155 160
Leu Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys		
	165	170 175
Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Ala Ser Thr		
	180	185 190
Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala		
195	200	205
Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys		
210	215	220
Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Thr Ser		
225	230	235 240
Glu Ala Gln Lys Ala Ala Lys Pro Ala Thr Glu Ala Thr Ala Thr Ala		
	245	250 255
Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly		
	260	265 270
Gly Tyr Lys Val		
275		

<210> 195
 <211> 276
 <212> PRT
 <213> Phleum pratense

<400> 195

Ala Asp Leu Gly Tyr Gly Gly Pro Ala Thr Pro Ala Ala Pro Ala Glu
1 5 10 15

Ala Ala Pro Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
20 25 30

Lys Ile Asn Asp Gly Phe Lys Ala Ala Leu Ala Ala Ala Gly Val
 35 40 45

Pro Pro Ala Asp Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala Ala
 50 55 60

Ser Asn Lys Ala Phe Ala Glu Gly Leu Ser Ala Glu Pro Lys Gly Ala
 65 70 75 80

Ala Glu Ser Ser Ser Lys Gly Ala Leu Thr Ser Lys Leu Glu Ala Ala
 85 90 95

Tyr Lys Leu Ala Tyr Lys Thr Ser Glu Gly Ala Thr Pro Glu Ala Lys
 100 105 110

Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile Ala
 115 120 125

Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Ala Glu Glu Val Lys
 130 135 140

Val Ile Pro Ala Gly Glu Leu Gln Phe Ile Glu Lys Val Asp Ser Ala
 145 150 155 160

Leu Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
 165 170 175

Phe Thr Val Phe Glu Ala Ala Phe Asn His Ala Ile Lys Ala Ser Thr
 180 185 190

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala
 195 200 205

Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Thr Ala Pro Glu Val Lys
 210 215 220

Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met Ser
 225 230 235 240

Glu Ala Gln Lys Ala Ala Lys Pro Ala Thr Glu Ala Thr Ala Thr Ala
 245 250 255

Thr Ala Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Thr Gly
260 265 270

Gly Tyr Lys Val
275

<210> 196
<211> 373
<212> PRT
<213> *Poa pratensis*

<400> 196

Met Asp Lys Ala Asn Gly Ala Tyr Lys Thr Ala Leu Lys Ala Ala Ser
1 5 10 15

Ala Val Ala Pro Ala Glu Lys Phe Pro Val Phe Gln Ala Thr Phe Asp
20 25 30

Lys Asn Leu Lys Glu Gly Leu Ser Gly Pro Asp Ala Val Gly Phe Ala
35 40 45

Lys Lys Leu Asp Ala Phe Ile Gln Thr Ser Tyr Leu Ser Thr Lys Ala
50 55 60

Ala Glu Pro Lys Glu Lys Phe Asp Leu Phe Val Leu Ser Leu Thr Glu
65 70 75 80

Val Leu Arg Phe Met Ala Gly Ala Val Lys Ala Pro Pro Ala Ser Lys
85 90 95

Phe Pro Ala Lys Pro Ala Pro Lys Val Ala Ala Tyr Thr Pro Ala Ala
100 105 110

Pro Ala Gly Ala Ala Pro Lys Ala Thr Thr Asp Glu Gln Lys Leu Ile
115 120 125

Glu Lys Ile Asn Val Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Gly
130 135 140

Val Pro Ala Ala Ser Lys Tyr Lys Thr Phe Val Ala Thr Phe Gly Ala
145 150 155 160

Ala Ser Asn Lys Ala Phe Ala Glu Ala Leu Ser Thr Glu Pro Lys Gly
165 170 175

Ala Ala Val Ala Ser Ser Lys Ala Val Leu Thr Ser Lys Leu Asp Ala
 180 185 190
 Ala Tyr Lys Leu Ala Tyr Lys Ser Ala Glu Gly Ala Thr Pro Glu Ala
 195 200 205
 Lys Tyr Asp Ala Tyr Val Ala Thr Leu Ser Glu Ala Leu Arg Ile Ile
 210 215 220
 Ala Gly Thr Leu Glu Val His Gly Val Lys Pro Ala Ala Glu Glu Val
 225 230 235 240
 Lys Ala Ile Pro Ala Gly Glu Leu Gln Val Ile Asp Lys Val Asp Ala
 245 250 255
 Ala Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp
 260 265 270
 Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Asp Ala Ile Lys Ala Ser
 275 280 285
 Thr Gly Gly Ala Tyr Gln Ser Tyr Lys Phe Ile Pro Ala Leu Glu Ala
 290 295 300
 Ala Val Lys Gln Ser Tyr Ala Ala Thr Val Ala Thr Ala Pro Ala Val
 305 310 315 320
 Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile Thr Ala Met
 325 330 335
 Ser Gln Ala Gln Lys Ala Ala Lys Pro Ala Ala Ala Val Thr Gly Thr
 340 345 350
 Ala Thr Ser Ala Val Gly Ala Ala Thr Gly Ala Ala Thr Ala Ala Ala
 355 360 365
 Gly Gly Tyr Lys Val
 370

<210> 197
 <211> 339
 <212> PRT

<213> Lolium perenne

<400> 197

Met Ala Val Gln Lys His Thr Val Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro
20 25 30

Ala Thr Pro Ala Thr Pro Ala Ala Pro Ala Thr Ala Ala Thr Pro Ala
35 40 45

Thr Pro Ala Thr Pro Ala Thr Pro Ala Ala Val Pro Ser Gly Lys Ala
50 55 60

Thr Thr Glu Glu Gln Lys Leu Ile Glu Lys Ile Asn Ala Gly Phe Lys
65 70 75 80

Ala Ala Val Ala Ala Ala Ala Val Val Pro Pro Ala Asp Lys Tyr Lys
85 90 95

Thr Phe Val Glu Thr Phe Gly Thr Ala Thr Asn Lys Ala Phe Val Glu
100 105 110

Gly Leu Ala Ser Gly Tyr Ala Asp Gln Ser Lys Asn Gln Leu Thr Ser
115 120 125

Lys Leu Asp Ala Ala Leu Lys Leu Ala Tyr Glu Ala Ala Gln Gly Ala
130 135 140

Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Leu Thr Glu Ala
145 150 155 160

Leu Arg Val Ile Ala Gly Thr Leu Glu Val His Ala Val Lys Pro Ala
165 170 175

Ala Glu Glu Val Lys Val Gly Ala Ile Pro Ala Ala Glu Val Gln Leu
180 185 190

Ile Asp Lys Val Asp Ala Ala Tyr Arg Thr Ala Ala Thr Ala Ala Asn
195 200 205

Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Asn Thr Phe Asn

210	215	220
Asn Ala Ile Lys Val Ser Leu Gly Ala Ala Tyr Asp Ser Tyr Lys Phe		
225	230	235 240
Ile Pro Thr Leu Val Ala Ala Val Lys Gln Ala Tyr Ala Ala Lys Gln		
	245	250 255
Ala Thr Ala Pro Glu Val Lys Tyr Thr Val Ser Glu Thr Ala Leu Lys		
	260	265 270
Lys Ala Val Thr Ala Met Ser Glu Ala Glu Lys Glu Ala Thr Pro Ala		
	275	280 285
Ala Ala Ala Thr Ala Thr Pro Thr Pro Ala Ala Ala Thr Ala Thr Ala		
	290	295 300
Thr Pro Ala Ala Ala Tyr Ala Thr Ala Thr Pro Ala Ala Ala Thr Ala		
305	310	315 320
Thr Ala Thr Pro Ala Ala Ala Thr Ala Thr Pro Ala Ala Ala Gly Gly		
	325	330 335

Tyr Lys Val

<210> 198
 <211> 301
 <212> PRT
 <213> Lolium perenne

<400> 198

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
1 5 10 15
Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Thr Pro
20 25 30
Ala Ala Ala Ala Thr Pro Ala Thr Pro Ala Ala Thr Pro Ala Ala Ala
35 40 45
Gly Gly Lys Ala Thr Thr Asp Glu Gln Lys Leu Leu Glu Asp Val Asn
50 55 60

Ala Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Asn Ala Pro Pro Ala
 65 70 75 80

Asp Lys Phe Lys Ile Phe Glu Ala Ala Phe Ser Glu Ser Ser Lys Gly
 85 90 95

Leu Leu Ala Thr Ser Ala Ala Lys Ala Pro Gly Leu Ile Pro Lys Leu
 100 105 110

Asp Thr Ala Tyr Asp Val Ala Tyr Lys Ala Ala Glu Gly Ala Thr Pro
 115 120 125

Glu Ala Lys Tyr Asp Ala Phe Val Thr Ala Leu Thr Glu Ala Leu Arg
 130 135 140

Val Ile Ala Gly Ala Leu Glu Val His Ala Val Lys Pro Ala Thr Glu
 145 150 155 160

Glu Val Pro Ala Ala Lys Ile Pro Thr Gly Glu Leu Gln Ile Val Asp
 165 170 175

Lys Ile Asp Ala Ala Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala
 180 185 190

Pro Thr Asn Asp Lys Phe Thr Val Phe Glu Ser Ala Phe Asn Lys Ala
 195 200 205

Leu Asn Glu Cys Thr Gly Gly Ala Tyr Glu Thr Tyr Lys Phe Ile Pro
 210 215 220

Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala
 225 230 235 240

Ala Pro Glu Val Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala
 245 250 255

Ile Thr Ala Met Thr Gln Ala Gln Lys Ala Gly Lys Pro Ala Ala Ala
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Val Ala Thr Gly Ala Ala Thr Ala Ala
 275 280 285

Ala Gly Ala Ala Thr Ala Ala Ala Gly Gly Tyr Lys Ala
 290 295 300

<210> 199
 <211> 301
 <212> PRT
 <213> Lolium perenne

<400> 199

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Asp Ser Tyr Ala Ala Asp Ala Gly Tyr Thr Pro
 20 25 30

Ala Ala Ala Ala Thr Pro Ala Thr Pro Ala Ala Thr Pro Ala Ala Gly
 35 40 45

Gly Gly Lys Ala Thr Thr Asp Glu Gln Lys Leu Leu Glu Asp Val Asn
 50 55 60

Ala Gly Phe Lys Ala Ala Val Ala Ala Asp Ala Asn Ala Pro Pro Ala
 65 70 75 80

Asp Lys Phe Lys Ile Phe Glu Ala Ala Phe Ser Glu Ser Cys Lys Gly
 85 90 95

Leu Leu Ala Thr Ser Asp Ala Lys Ala Pro Gly Leu Ile Leu Lys Leu
 100 105 110

Asp Thr Asp Tyr Asp Val Ala Tyr Lys Ala Gly Glu Gly Ala Thr Pro
 115 120 125

Glu Ala Lys Tyr Asp Ala Phe Val Thr Ala Leu Thr Glu Ala Leu Arg
 130 135 140

Val Ile Ala Gly Ala Leu Glu Val His Ala Val Lys Pro Ala Thr Glu
 145 150 155 160

Glu Val Pro Ala Ala Lys Ile Pro Thr Gly Glu Leu Gln Ile Val Asp
 165 170 175

Lys Ile Asp Ala Ala Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala
 180 185 190

Pro Thr Asn Asp Lys Phe Thr Val Phe Glu Ser Ala Phe Asn Lys Ala
 195 200 205

Leu Lys Glu Cys Thr Gly Gly Ala Tyr Glu Thr Tyr Lys Phe Ile Pro
 210 215 220

Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Thr Thr Val Ala Ala
 225 230 235 240

Ala Pro Glu Val Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala
 245 250 255

Ile Thr Ala Met Ser Gln Ala Gln Lys Val Ala Lys Pro Ala Ala Ala
 260 265 270

Ala Ala Thr Gly Ala Ala Thr Val Ala Thr Gly Ala Ala Thr Ala Ala
 275 280 285

Ala Gly Gly Ala Thr Ala Ala Ala Gly Gly Tyr Lys Ala
 290 295 300

<210> 200
 <211> 290
 <212> PRT
 <213> Phleum pratense

<400> 200

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro
 20 25 30

Ala Thr Pro Ala Ala Ala Gly Ala Glu Ala Gly Lys Ala Thr Thr Glu
 35 40 45

Glu Gln Lys Leu Ile Glu Asp Ile Asn Val Gly Phe Lys Ala Ala Val
 50 55 60

Ala Ala Ala Ala Ser Val Pro Ala Ala Asp Lys Phe Lys Thr Phe Glu
 65 70 75 80

Ala Ala Phe Thr Ser Ser Ser Lys Ala Ala Thr Ala Lys Ala Pro Gly
 85 90 95

Leu Val Pro Lys Leu Asp Ala Ala Tyr Ser Val Ala Tyr Lys Ala Ala
 100 105 110

Val Gly Ala Thr Pro Glu Ala Lys Phe Asp Ser Phe Val Ala Ser Leu
 115 120 125

Thr Glu Ala Leu Arg Val Ile Ala Gly Ala Leu Glu Val His Ala Val
 130 135 140

Lys Pro Val Thr Glu Asp Pro Ala Trp Pro Lys Ile Pro Ala Gly Glu
 145 150 155 160

Leu Gln Ile Ile Asp Lys Ile Asp Ala Ala Phe Lys Val Ala Ala Thr
 165 170 175

Ala Ala Ala Thr Ala Pro Ala Asp Asp Lys Phe Thr Val Phe Glu Ala
 180 185 190

Ala Phe Asn Lys Ala Ile Lys Glu Ser Thr Gly Gly Ala Tyr Asp Thr
 195 200 205

Tyr Lys Cys Ile Pro Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala
 210 215 220

Ala Thr Val Ala Ala Ala Pro Gln Val Lys Tyr Ala Val Phe Glu Ala
 225 230 235 240

Ala Leu Thr Lys Ala Ile Thr Ala Met Ser Glu Val Gln Lys Val Ser
 245 250 255

Gln Pro Ala Thr Gly Ala Ala Thr Val Ala Ala Gly Ala Ala Thr Thr
 260 265 270

Ala Thr Gly Ala Ala Ser Gly Ala Ala Thr Val Ala Ala Gly Gly Tyr
 275 280 285

Lys Val
 290

<210> 201

<211> 264
 <212> PRT
 <213> *Holcus lanatus*

<400> 201

Ala	Asp	Ala	Gly	Tyr	Thr	Pro	Ala	Ala	Pro	Ala	Ala	Ala	Gly	Ala	Gly	1	5	10	15
Gly	Lys	Ala	Thr	Thr	Asp	Glu	Gln	Lys	Leu	Leu	Glu	Asp	Val	Asn	Ala	20	25	30	
Gly	Phe	Lys	Thr	Ala	Val	Ala	Ala	Ala	Ala	Asn	Val	Pro	Pro	Ala	Asp	35	40	45	
Lys	Tyr	Lys	Thr	Phe	Glu	Ala	Ala	Phe	Thr	Ala	Ser	Ser	Lys	Ala	Ser	50	55	60	
Ile	Ala	Ala	Ala	Ala	Thr	Lys	Ala	Pro	Gly	Leu	Ile	Pro	Gln	Leu	Asn	65	70	75	80
Ala	Ala	Thr	Asn	Thr	Ala	Tyr	Ala	Ala	Ala	Gln	Gly	Ala	Thr	Pro	Glu	85	90	95	
Ala	Lys	Tyr	Asp	Ala	Phe	Val	Thr	Thr	Leu	Thr	Glu	Ala	Leu	Arg	Val	100	105	110	
Ile	Ala	Gly	Ala	Leu	Glu	Val	His	Ala	Val	Lys	Pro	Ala	Thr	Glu	Glu	115	120	125	
Val	Gly	Ala	Ala	Lys	Ile	Pro	Ala	Gly	Glu	Leu	Gln	Ile	Val	Asp	Lys	130	135	140	
Ile	Asp	Ala	Ala	Phe	Arg	Ile	Ala	Ala	Thr	Ala	Ala	Asn	Ala	Ala	Pro	145	150	155	160
Val	Asn	Asp	Lys	Phe	Thr	Val	Phe	Glu	Gly	Ala	Phe	Asn	Lys	Ala	Ile	165	170	175	
Lys	Glu	Ser	Thr	Gly	Gly	Ala	Tyr	Glu	Ala	Tyr	Lys	Phe	Ile	Pro	Ser	180	185	190	
Leu	Glu	Thr	Ala	Val	Lys	Gln	Ala	Tyr	Ala	Ala	Thr	Val	Ala	Thr	Ala	195	200	205	

Pro Glu Val Lys Tyr Thr Val Phe Glu Thr Ala Leu Lys Lys Ala Ile
 210 215 220

Thr Ala Met Ser Glu Ala Gln Lys Glu Ala Lys Pro Val Ala Ala Ala
 225 230 235 240

Thr Gly Ala Ala Thr Ala Ala Ala Gly Val Ala Ala Gly Ala Ala Thr
 245 250 255

Ala Ala Ala Gly Gly Tyr Lys Val
 260

<210> 202
 <211> 287
 <212> PRT
 <213> Phleum pratense

<400> 202

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro
 20 25 30

Ala Thr Pro Ala Ala Ala Gly Ala Glu Ala Gly Lys Ala Thr Thr Glu
 35 40 45

Glu Gln Lys Leu Ile Glu Asp Ile Asn Val Gly Phe Lys Ala Ala Val
 50 55 60

Ala Ala Ala Ala Ser Val Pro Ala Ala Asp Lys Phe Lys Thr Phe Glu
 65 70 75 80

Ala Ala Phe Thr Ser Ser Ser Lys Ala Ala Thr Ala Lys Ala Pro Gly
 85 90 95

Leu Val Pro Lys Leu Asp Ala Ala Tyr Ser Val Ser Tyr Lys Ala Ala
 100 105 110

Val Gly Ala Thr Pro Glu Ala Lys Phe Asp Ser Phe Val Ala Ser Leu
 115 120 125

Thr Glu Ala Leu Arg Val Ile Ala Gly Ala Leu Glu Val His Ala Val

130	135	140
Lys Pro Val Thr Glu Glu Pro Gly Met Ala Lys Ile Pro Ala Gly Glu		
145	150	155 160
Leu Gln Ile Ile Asp Lys Ile Asp Ala Ala Phe Lys Val Ala Ala Thr		
	165	170 175
Ala Ala Ala Thr Ala Pro Ala Asp Thr Val Phe Glu Ala Ala Phe Asn		
	180	185 190
Lys Ala Ile Lys Glu Ser Thr Gly Gly Ala Tyr Asp Thr Tyr Lys Cys		
	195	200 205
Ile Pro Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val		
	210	215 220
Ala Ala Ala Pro Gln Val Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr		
225	230	235 240
Lys Ala Ile Thr Ala Met Ser Glu Val Gln Lys Val Ser Gln Pro Ala		
	245	250 255
Thr Gly Ala Ala Thr Val Ala Ala Gly Ala Ala Thr Thr Ala Ala Gly		
	260	265 270
Ala Ala Ser Gly Ala Ala Thr Val Ala Ala Gly Gly Tyr Lys Val		
	275	280 285
<210> 203		
<211> 296		
<212> PRT		
<213> Holcus lanatus		
<400> 203		
Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Thr Val Ala Leu		
1	5	10 15
Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro		
	20	25 30
Thr Thr Pro Ala Ala Ala Gly Ala Ala Ala Gly Lys Ile Thr Pro Thr		
	35	40 45

Gln Glu Gln Lys Leu Met Glu Asp Ile Asn Val Gly Phe Lys Ala Ala
 50 55 60

Val Ala Ala Ala Ala Gly Ala Pro Pro Ala Asp Lys Phe Lys Thr Phe
 65 70 75 80

Gln Ala Ala Phe Ser Ala Ser Val Glu Ala Ser Ala Ala Lys Leu Asn
 85 90 95

Ala Ala Gln Ala Pro Gly Phe Val Ser His Val Ala Ala Thr Ser Asp
 100 105 110

Ala Thr Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe Asp
 115 120 125

Ser Phe Val Ala Ala Phe Thr Glu Ala Leu Arg Val Ile Ala Gly Val
 130 135 140

Leu Lys Val His Ala Val Lys Pro Ile Thr Glu Glu Ile Gly Ala Ala
 145 150 155 160

Lys Ile Pro Ala Gly Glu Leu Gln Ile Ile Asp Lys Ile Asp Ala Ala
 165 170 175

Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
 180 185 190

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Glu Ser Thr
 195 200 205

Gly Gly Ala Tyr Asp Thr Tyr Lys Ser Ile Pro Ser Leu Glu Ala Ala
 210 215 220

Val Lys Gln Ala Tyr Ala Ala Thr Ile Ala Ala Ala Pro Glu Val Lys
 225 230 235 240

Phe Ala Val Phe Lys Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Ala
 245 250 255

Glu Val Gln Lys Val Ser Lys Pro Val Ala Gly Ala Ala Thr Ala Ala
 260 265 270

Thr Gly Ala Ala Thr Gly Ala Ala Gly Ala Ala Thr Gly Ala Ala Thr
 275 280 285

Val Ser Ala Gly Gly Tyr Lys Val
 290 295

<210> 204
 <211> 303
 <212> PRT
 <213> *Poa pratensis*

<400> 204

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Thr Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Ala Pro
 20 25 30

Ala Thr Pro Ala Ala Ala Gly Ala Ala Ala Gly Lys Ile Thr Pro Thr
 35 40 45

Gln Glu Gln Lys Leu Met Glu Asp Ile Asn Val Gly Phe Lys Ala Ala
 50 55 60

Val Ala Ala Ala Ala Gly Ala Pro Pro Ala Asp Lys Phe Lys Thr Phe
 65 70 75 80

Gln Ala Ala Phe Ser Ala Ser Val Glu Ala Ser Ala Ala Lys Leu Asn
 85 90 95

Ala Ala Gln Ala Pro Gly Phe Val Ser His Val Ala Ala Thr Ser Asp
 100 105 110

Ala Thr Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe Asp
 115 120 125

Ser Phe Val Ala Ala Phe Thr Glu Ala Leu Arg Ile Ile Ala Gly Val
 130 135 140

Leu Lys Val His Ala Val Lys Pro Ile Thr Glu Glu Thr Gly Ala Ala
 145 150 155 160

Lys Ile Pro Ala Gly Glu Gln Gln Ile Ile Asp Lys Ile Asp Ala Ala
 165 170 175

Phe Lys Val Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
180 185 190

Phe Thr Val Phe Glu Ala Ala Phe Asn Asn Ala Ile Lys Glu Ser Thr
195 200 205

Gly Gly Ala Tyr Asp Thr Tyr Lys Ser Ile Pro Ser Leu Glu Ala Ala
210 215 220

Val Lys Gln Ala Tyr Ala Ala Thr Ile Ala Ala Ala Pro Glu Val Lys
225 230 235 240

Phe Ala Val Phe Lys Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Ala
245 250 255

Glu Val Gln Lys Val Ser Lys Pro Val Ala Gly Ala Ala Thr Val Ala
260 265 270

Ala Gly Ala Ala Thr Ala Ala Thr Gly Ala Ala Thr Gly Ala Ala Gly
275 280 285

Ala Ala Thr Gly Ala Ala Thr Val Ser Ala Gly Gly Tyr Lys Val
290 295 300

<210> 205
<211> 295
<212> PRT
<213> Phleum pratense

<400> 205

Ser Val Lys Arg Ser Asn Gly Ser Ala Glu Val His Arg Gly Ala Val
1 5 10 15

Pro Arg Arg Gly Pro Arg Gly Gly Pro Gly Arg Ser Tyr Ala Ala Asp
20 25 30

Ala Gly Tyr Ala Pro Ala Thr Pro Ala Ala Ala Gly Ala Glu Ala Gly
35 40 45

Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Asp Ile Asn Val Gly
50 55 60

Phe Lys Ala Ala Val Ala Ala Ala Ala Ser Val Pro Ala Ala Asp Lys
 65 70 75 80

Phe Lys Thr Phe Glu Ala Ala Phe Thr Ser Ser Ser Lys Ala Ala Thr
 85 90 95

Ala Lys Ala Pro Gly Leu Val Pro Lys Leu Asp Ala Ala Tyr Ser Val
 100 105 110

Ala Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe Asp Ser
 115 120 125

Phe Val Ala Ser Leu Thr Glu Ala Leu Arg Val Ile Ala Gly Ala Leu
 130 135 140

Glu Val His Ala Val Lys Pro Val Thr Glu Glu Pro Gly Met Ala Lys
 145 150 155 160

Ile Pro Ala Gly Glu Leu Gln Ile Ile Asp Lys Ile Asp Ala Ala Phe
 165 170 175

Lys Val Ala Ala Thr Ala Ala Ala Thr Ala Pro Ala Asp Asp Lys Phe
 180 185 190

Thr Val Phe Glu Ala Ala Phe Asn Lys Ala Ile Lys Glu Ser Thr Gly
 195 200 205

Gly Ala Tyr Asp Thr Tyr Lys Cys Ile Pro Ser Leu Glu Ala Ala Val
 210 215 220

Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala Pro Gln Val Lys Tyr
 225 230 235 240

Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Ser Glu
 245 250 255

Val Gln Lys Val Ser Gln Pro Ala Thr Gly Ala Ala Thr Val Ala Ala
 260 265 270

Gly Ala Ala Thr Thr Ala Ala Gly Ala Ala Ser Gly Ala Ala Thr Val
 275 280 285

Ala Ala Gly Gly Tyr Lys Val

290

295

<210> 206
 <211> 281
 <212> PRT
 <213> Phleum pratense

<400> 206

Ala Val Pro Arg Arg Gly Pro Arg Gly Gly Pro Gly Arg Ser Tyr Ala
 1 5 10 15

Ala Asp Ala Gly Tyr Ala Pro Ala Thr Pro Ala Ala Ala Gly Ala Glu
 20 25 30

Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Asp Ile Asn
 35 40 45

Val Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Ser Val Pro Ala Gly
 50 55 60

Asp Lys Phe Lys Thr Phe Glu Ala Ala Phe Thr Ser Ser Ser Lys Ala
 65 70 75 80

Ala Thr Ala Lys Ala Pro Gly Leu Val Pro Lys Leu Asp Ala Ala Tyr
 85 90 95

Ser Val Ala Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe
 100 105 110

Asp Ser Phe Val Ala Ser Leu Thr Glu Ala Leu Arg Val Ile Ala Gly
 115 120 125

Ala Leu Glu Val His Ala Val Lys Pro Val Thr Glu Glu Pro Gly Met
 130 135 140

Ala Lys Ile Pro Ala Gly Glu Leu Gln Ile Ile Asp Lys Ile Asp Ala
 145 150 155 160

Ala Phe Lys Val Ala Ala Thr Ala Ala Ala Thr Ala Pro Ala Asp Asp
 165 170 175

Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Lys Ala Ile Lys Glu Ser
 180 185 190

Thr Gly Gly Ala Tyr Asp Thr Tyr Lys Cys Ile Pro Ser Leu Glu Ala
 195 200 205

Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala Pro Gln Val
 210 215 220

Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met
 225 230 235 240

Ser Glu Val Gln Lys Val Ser Gln Pro Ala Thr Gly Ala Ala Thr Val
 245 250 255

Ala Ala Gly Ala Ala Thr Thr Ala Thr Gly Ala Ala Ser Gly Ala Ala
 260 265 270

Thr Val Ala Ala Gly Gly Tyr Lys Val
 275 280

<210> 207
 <211> 284
 <212> PRT
 <213> Phleum pratense

<400> 207

Ala Ala Ala Ala Val Pro Arg Arg Gly Pro Arg Gly Gly Pro Gly Arg
 1 5 10 15

Ser Tyr Thr Ala Asp Ala Gly Tyr Ala Pro Ala Thr Pro Ala Ala Ala
 20 25 30

Gly Ala Ala Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu
 35 40 45

Asp Ile Asn Val Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Ser Val
 50 55 60

Pro Ala Ala Asp Lys Phe Lys Thr Phe Glu Ala Ala Phe Thr Ser Ser
 65 70 75 80

Ser Lys Ala Ala Ala Ala Lys Ala Pro Gly Leu Val Pro Lys Leu Asp
 85 90 95

Ala Ala Tyr Ser Val Ala Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu

100	105	110
Ala Lys Phe Asp Ser Phe Val	Ala Ser Leu Thr Glu	Ala Leu Arg Val
115	120	125
Ile Ala Gly Ala Leu Glu Val	His Ala Val Lys Pro Val	Thr Glu Glu
130	135	140
Pro Gly Met Ala Lys Ile	Pro Ala Gly Glu Leu Gln	Ile Ile Asp Lys
145	150	155
Ile Asp Ala Ala Phe Lys Val	Ala Ala Thr Ala Ala Ala	Thr Ala Pro
165	170	175
Ala Asp Asp Lys Phe Thr Val	Phe Glu Ala Ala Phe Asn	Lys Ala Ile
180	185	190
Lys Glu Ser Thr Gly Gly Ala	Tyr Asp Thr Tyr Lys Cys	Ile Pro Ser
195	200	205
Leu Glu Ala Ala Val Lys Gln	Ala Tyr Ala Ala Thr Val	Ala Ala Ala
210	215	220
Pro Gln Val Lys Tyr Ala Val	Phe Glu Ala Ala Leu Thr	Lys Ala Ile
225	230	235
Thr Ala Met Ser Glu Val Gln	Lys Val Ser Gln Pro Ala	Thr Gly Ala
245	250	255
Ala Thr Val Ala Ala Gly Ala	Ala Thr Ala Ala Gly Ala	Ala Ser
260	265	270
Gly Ala Ala Thr Val Ala Ala	Gly Gly Tyr Lys Val	
275	280	
<210> 208		
<211> 266		
<212> PRT		
<213> Phleum pratense		
<400> 208		
Ala Asp Ala Gly Tyr Ala Pro	Ala Thr Pro Ala Ala Ala	Gly Ala Glu
1	5	10
		15

Ala Gly Lys Ala Thr Thr Glu Glu Gln Lys Leu Ile Glu Asp Ile Asn
 20 25 30

Val Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Ser Val Pro Ala Ala
 35 40 45

Asp Lys Phe Lys Thr Phe Glu Ala Ala Phe Thr Ser Ser Ser Lys Ala
 50 55 60

Ala Thr Ala Lys Ala Pro Gly Leu Val Pro Lys Leu Asp Ala Ala Tyr
 65 70 75 80

Ser Val Ala Tyr Lys Ala Ala Val Gly Ala Thr Pro Glu Ala Lys Phe
 85 90 95

Asp Ser Phe Val Ala Ser Leu Thr Glu Ala Leu Arg Val Ile Ala Gly
 100 105 110

Ala Leu Glu Val His Ala Val Lys Pro Val Thr Glu Glu Pro Gly Met
 115 120 125

Ala Lys Ile Pro Ala Gly Glu Leu Gln Ile Ile Asp Lys Ile Asp Ala
 130 135 140

Ala Phe Lys Val Ala Ala Thr Ala Ala Ala Thr Ala Pro Ala Asp Asp
 145 150 155 160

Lys Phe Thr Val Phe Glu Ala Ala Phe Asn Lys Ala Ile Lys Glu Ser
 165 170 175

Thr Gly Gly Ala Tyr Asp Thr Tyr Lys Cys Ile Pro Ser Leu Glu Ala
 180 185 190

Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala Pro Gln Val
 195 200 205

Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met
 210 215 220

Ser Glu Val Gln Lys Val Ser Gln Pro Ala Thr Gly Ala Ala Thr Val
 225 230 235 240

Ala Ala Gly Ala Ala Thr Gly Thr Ala Ala Gly Ala Ala Ser Gly Ala
245 250 255

Ala Thr Val Ala Ala Gly Gly Tyr Lys Val
260 265

<210> 209
<211> 240
<212> PRT
<213> Phleum pratense

<400> 209

Gln Lys Leu Leu Glu Asp Val Asn Ala Ser Phe Lys Ala Ala Val Ala
1 5 10 15

Ala Ala Ala Lys Val Pro Pro Ala Asp Lys Tyr Lys Thr Phe Leu Arg
20 25 30

Ala Phe Thr Val Leu Asp Arg Gly Ser Thr Glu Gln Ser Lys Ala Glu
35 40 45

Glu Thr Lys Met Pro Glu Leu Ser Ser Lys Leu Val Asp Ala Tyr Met
50 55 60

Ala Ala Phe Lys Ala Ser Thr Gly Gly Thr Gln Glu Ala Lys Tyr Asp
65 70 75 80

Ala Phe Val Thr Thr Leu Thr Glu Ala Leu Arg Val Ile Ala Gly Ala
85 90 95

Leu Glu Val His Ala Val Lys Pro Ala Thr Glu Glu Val Pro Ala Ala
100 105 110

Lys Ile Pro Ala Gly Asp Leu Gln Val Val Asp Lys Ile Asp Ala Ser
115 120 125

Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala Pro Ala Asn Asp Lys
130 135 140

Phe Thr Val Phe Glu Thr Ala Phe Asn Lys Ala Leu Lys Glu Ser Thr
145 150 155 160

Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ser Leu Glu Ala Ala
165 170 175

Val Lys Gln Ala Tyr Ala Ser Thr Val Ala Ala Ala Pro Glu Val Lys
180 185 190

Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Ser
195 200 205

Gln Ala Gln Lys Val Ala Gln Pro Ala Ala Ala Ala Thr Gly Ala Ala
210 215 220

Thr Val Ala Ala Gly Ala Ala Thr Thr Ala Ala Gly Gly Tyr Lys Val
225 230 235 240

<210> 210
<211> 294
<212> PRT
<213> Phalaris aquatica

<400> 210

Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Met Ala Leu
1 5 10 15

Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Thr Pro Pro
20 25 30

Thr Pro Ala Thr Pro Ala Val Pro Gly Ala Ala Ala Gly Lys Ala Thr
35 40 45

Thr His Glu Gln Lys Leu Ile Glu Asp Ile Asn Ala Ala Phe Lys Trp
50 55 60

Trp Pro Ala Ser Ala Pro Pro Ala Asp Lys Tyr Lys Thr Phe Glu Thr
65 70 75 80

Ala Phe Ser Lys Ala Asn Ile Ala Gly Ala Ser Thr Lys Gly Leu Asp
85 90 95

Ala Ala Tyr Ser Val Val Tyr Asn Thr Ala Ala Gly Ala Thr Pro Glu
100 105 110

Ala Lys Tyr Asp Ser Phe Val Thr Ala Leu Thr Glu Ala Leu Arg Ile
115 120 125

Met Ala Gly Thr Leu Glu Val His Ala Val Lys Pro Ala Thr Glu Glu
 130 135 140

Glu Val Pro Ser Ala Lys Ile Leu Arg Ala Asn Ser Arg Ser Ser Thr
 145 150 155 160

Arg Ser Ser Arg Phe Lys Ile Ala Ala Thr Val Ala Thr Pro Leu Ser
 165 170 175

His Ser Thr Ala Ala Asn Ser Ala Pro Ala Asn Asp Lys Phe Thr Val
 180 185 190

Phe Glu Gly Ala Phe Asn Lys Ala Ile Lys Glu Arg His Gly Gly Pro
 195 200 205

Thr Glu Thr Tyr Lys Phe Ile Pro Ser Leu Glu Ala Ala Val Lys Gln
 210 215 220

Ala Tyr Gly Ala Thr Val Ala Arg Ala Pro Glu Val Lys Tyr Ala Val
 225 230 235 240

Phe Glu Ala Gly Leu Thr Lys Ala Ile Thr Ala Met Ser Glu Ala Gln
 245 250 255

Lys Val Ala Lys Pro Val Arg Leu Ser Pro Gln Pro Pro Gln Val Leu
 260 265 270

Pro Leu Ala Ala Gly Gly Ala Ala Thr Val Ala Ala Ala Ser Asp Ser
 275 280 285

Arg Gly Gly Tyr Lys Val
 290

<210> 211
 <211> 320
 <212> PRT
 <213> Phalaris aquatica

<400> 211

Met Ala Val Gln Lys Tyr Thr Met Ala Leu Phe Leu Ala Val Ala Leu
 1 5 10 15

Val Ala Gly Pro Ala Ala Pro Thr Pro Pro Thr Pro Arg Thr Pro Pro
 20 25 30

Leu Leu Pro Pro Pro Arg Ala Arg Asp Lys Ala Thr Leu Thr Ser Arg
 35 40 45

Ser Val Glu Asp Ile Asn Ala Ala Ser Arg Arg Pro Trp Trp Ala Ser
 50 55 60

Val Pro Pro Ala Asp Lys Phe Lys Thr Phe Ala Asp His Val Leu Cys
 65 70 75 80

Val Pro Asn Ala Asp Val Thr Ser Ala Ala Thr Lys Ala Pro Gln Leu
 85 90 95

Lys Ala Lys Leu Asp Ala Ala Tyr Arg Val Ala Tyr Glu Ala Ala Glu
 100 105 110

Gly Ser Thr Pro Glu Ala Lys Tyr Asp Ala Phe Ile Ala Ala Leu Thr
 115 120 125

Glu Ala Leu Arg Val Ile Ala Gly Ala Phe Glu Val His Ala Val Lys
 130 135 140

Pro Ala Thr Glu Glu Val Val Ala Asp Pro Val Gly Glu Leu Gln Ile
 145 150 155 160

Val Asp Lys Ile Asp Ala Ala Phe Lys Ile Ala Ala Thr Ala Ala Asn
 165 170 175

Ser Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Gly Ala Phe Asn
 180 185 190

Lys Ala Ile Lys Glu Ser Thr Ala Gly Ala Tyr Glu Thr Tyr Lys Phe
 195 200 205

Ile Pro Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Gly Ala Thr Val
 210 215 220

Ala Arg Ala Pro Glu Val Lys Tyr Ala Val Phe Glu Ala Gly Leu Thr
 225 230 235 240

Lys Ala Ile Thr Ala Met Ser Glu Ala Gln Lys Val Ala Lys Pro Pro
 245 250 255

Leu Ser Pro Gln Pro Pro Gln Val Leu Pro Leu Ala Ala Gly Gly Ala
260 265 270

Ala Thr Val Ala Ala Ala Ser Asp Val Arg Val Cys Arg Ser His Gly
275 280 285

Thr Leu Gln Asp Ala Cys Leu Leu Arg Cys Arg Gly Gly Cys Gln Pro
290 295 300

Val Val Trp Arg Gly Gly Ser His Arg Ala Arg Gly Gly Tyr Lys Val
305 310 315 320

<210> 212
<211> 313
<212> PRT
<213> Hordeum vulgare

<400> 212

Met Ala Asn Ser Gly Arg Glu His Ser Ala Val Pro Arg Arg Arg Asn
1 5 10 15

Leu Val Ala Leu Val Pro Arg His Gly Cys Tyr Ala Glu Phe Ser Leu
20 25 30

Tyr Val Cys Val Gly Asn Ile Asn Ala Pro Phe Pro Val Phe Asn Arg
35 40 45

Thr Thr Phe Ile Ala Asn Ala Gly Ile Glu Ala Glu Leu Glu Pro His
50 55 60

Phe Leu Leu Leu Leu Phe Thr Phe Ser Ser Ser Ser Phe Phe Thr
65 70 75 80

Leu Leu Lys Thr Met Ile His Phe Thr Asp Arg Ser Asp Asn Lys Asn
85 90 95

Lys Ala Met Met Arg Gly Arg Glu Phe Arg Lys Ala Phe Ala Glu Val
100 105 110

Leu Lys Gly Ala Ala Thr Gly Gln Ile Ala Gly Gln Ser Ser Ser Met
115 120 125

Ala Lys Leu Ser Ser Ser Leu Glu Leu Ser Tyr Lys Leu Ala Tyr Asp

130	135	140
Lys Ala Gln Gly Ala Thr Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala		
145	150	155 160
Thr Leu Thr Glu Ser Leu Arg Val Ile Ser Gly Thr Leu Glu Val His		
	165	170 175
Ser Val Lys Pro Ala Ala Glu Glu Val Lys Gly Val Pro Ala Gly Glu		
	180	185 190
Leu Lys Ala Ile Asp Gln Val Asp Ala Ala Phe Arg Thr Ala Ala Thr		
	195	200 205
Ala Ala Asp Ala Ala Pro Ala Asn Asp Lys Phe Thr Val Phe Glu Ser		
	210	215 220
Leu Gln Gln Gly Pro Ser Arg Lys Pro Arg Gly Gly Ala Tyr Glu Ser		
225	230	235 240
Tyr Lys Phe Ile Pro Ala Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala		
	245	250 255
Ala Thr Val Ala Ala Ala Pro Glu Val Lys Phe Thr Val Phe Gln Thr		
	260	265 270
Ala Leu Ser Lys Ala Ile Asn Ala Met Thr Gln Ala Gln Lys Val Ala		
	275	280 285
Lys Pro Ala Ala Ala Ala Thr Ala Thr Ala Thr Val Ala Ala Gly Ala		
	290	295 300
Ala Ala Thr Ala Gly Asn Tyr Lys Val		
305	310	
<210> 213		
<211> 179		
<212> PRT		
<213> Hordeum vulgare		
<400> 213		
Leu Glu Leu Ser Tyr Lys Leu Ala Tyr Asp Lys Ala Gln Gly Ala Thr		
1	5	10 15

Pro Glu Ala Lys Tyr Asp Ala Tyr Val Ala Thr Leu Thr Glu Ser Leu
 20 25 30

Arg Val Ile Ser Gly Thr Leu Glu Val His Ser Val Lys Pro Ala Ala
 35 40 45

Glu Glu Val Lys Gly Val Pro Ala Gly Glu Leu Lys Ala Ile Asp Gln
 50 55 60

Val Asp Ala Ala Phe Arg Thr Ala Ala Thr Ala Ala Asp Ala Ala Pro
 65 70 75 80

Ala Asn Asp Lys Phe Thr Val Phe Glu Ser Leu Gln Gln Gly Pro Ser
 85 90 95

Arg Lys Pro Arg Gly Gly Ala Tyr Glu Ser Tyr Lys Phe Ile Pro Ala
 100 105 110

Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala
 115 120 125

Pro Glu Val Lys Phe Thr Val Phe Gln Thr Ala Leu Ser Lys Ala Ile
 130 135 140

Asn Ala Met Thr Gln Ala Gln Lys Val Ala Lys Pro Ala Ala Ala Ala
 145 150 155 160

Thr Ala Thr Ala Thr Val Ala Ala Gly Ala Ala Ala Thr Ala Gly Asn
 165 170 175

Tyr Lys Val

<210> 214
 <211> 210
 <212> PRT
 <213> *Vespula vulgaris*

<220>
 <221> MISC_FEATURE
 <222> (1)..(210)
 <223> where X is any amino acid

<400> 214

Xaa Xaa Glu Ala Glu Phe Asn Asn Tyr Cys Lys Ile Lys Cys Leu Lys
 1 5 10 15
 Gly Gly Val His Thr Ala Cys Lys Tyr Gly Ser Leu Lys Pro Asn Cys
 20 25 30
 Gly Asn Lys Val Val Val Ser Tyr Gly Leu Thr Lys Gln Glu Lys Gln
 35 40 45
 Asp Ile Leu Lys Glu His Asn Asp Phe Arg Gln Lys Ile Ala Arg Gly
 50 55 60
 Leu Glu Thr Arg Gly Asn Pro Gly Pro Gln Pro Pro Ala Lys Asn Met
 65 70 75 80
 Lys Asn Leu Val Trp Asn Asp Glu Leu Ala Tyr Val Ala Gln Val Trp
 85 90 95
 Ala Asn Gln Cys Gln Tyr Gly His Asp Thr Cys Arg Asp Val Ala Lys
 100 105 110
 Tyr Gln Val Gly Gln Asn Val Ala Leu Thr Gly Ser Thr Ala Ala Lys
 115 120 125
 Tyr Asp Asp Pro Val Lys Leu Val Lys Met Trp Glu Asp Glu Val Lys
 130 135 140
 Asp Tyr Asn Pro Lys Lys Lys Phe Ser Gly Asn Asp Phe Leu Lys Thr
 145 150 155 160
 Gly His Tyr Thr Gln Met Val Trp Ala Asn Thr Lys Glu Val Gly Cys
 165 170 175
 Gly Ser Ile Lys Tyr Ile Gln Glu Lys Trp His Lys His Tyr Leu Val
 180 185 190
 Cys Asn Tyr Gly Pro Ser Gly Asn Phe Lys Asn Glu Glu Leu Tyr Gln
 195 200 205
 Thr Lys
 210

<210> 215
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<220>
<221> CDS
<222> (4)..(36)
<223>

<400> 215
ccg ctc gag aaa aga aac aat tat tgt aaa ata aaa tg
Leu Glu Lys Arg Asn Asn Tyr Cys Lys Ile Lys
1 5 10

38

<210> 216
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> oligonucleotide primer

<400> 216

Leu Glu Lys Arg Asn Asn Tyr Cys Lys Ile Lys
1 5 10

<210> 217
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Kex2 cleavage site

<400> 217

Glu Ala Glu Ala Glu Phe
1 5